DOCUMENT RESUME

ED 192 242 CG 014 708

AUTHOR Darabi, Katherine F.
TITLE The Education of Non-High School Graduates After the Birth of a Child. Final Report.
INSTITUTION Columbia Univ., New York, N.Y.
SPONS AGENCY National Inst. of Education (DHEW), Washington, D.C.
BUREAU NO 80813
PUB DATE 30 Sep 79
GRANT NIE-G-78-0141
NOTE 142p.: Tables not filmed due to marginal reproducibility.

EDRS PRICE MF01/PC06 Plus Postage.
DESCRIPTORS *Academic Aspiration: *Attendance: Behavior Patterns: Blacks: *Dropout Characteristics: Dropouts: Females: High School Equivalency Programs: Hispanic Americans: *Pregnant Students: *Reentry Students: Secondary Education: *Sex Role: Student Attitudes

ABSTRACT

In education, considerable attention has been paid to the characteristics and prevalence of high school dropouts. However, pregnant teenagers present a special case of dropouts since many have interrupted their schooling by force rather than by choice. Additionally, the cross-sectional nature of most dropout studies precludes an investigation of those who later return to school. Structured home interviews were conducted with 160 Black and Hispanic females who had not yet graduated from high school when they first become pregnant. Their educational status three years after the first child's birth was ascertained, and characteristics of those who did and did not return to school were identified. Within four years of their first child's birth, 33% of the sample had returned to school. Of the returners, 26% had graduated. Black women were more likely than Hispanic women to return to school: Hispanic women born outside the United States were least likely to return. Decisions to return to school seemed to be a result of high educational aspirations and modern sex role attitudes. (Author/HLM)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED192242

06

Final Report

The Education of Non-High School Graduates After the Birth of a Child.

Grant No. NIE-G-78-0141

Project No. 80813

Period: 10/1/78 to 9/30/79

P.I.: Katherine F. Darabi
Senior Staff Associate
Columbia University

CG014708

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Katherine Darabi

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

TABLE OF CONTENTS

Page

CHAPTER I: INTRODUCTION..... 1

Purpose

Extent of the Problem

Theoretical Framework

Significance of the Study

CHAPTER II: RELATED RESEARCH..... 9

School Policies and Legislation

New York City Educational Policies

Other Theories of School Attrition Among Pregnant Students

Resumption of Schooling After Pregnancy

Dropout Studies

Demographic Studies of the Consequences of Early Childbearing

Special Educational Programs for Pregnant Teens

Status Attainment Research

CHAPTER III: PROCEDURE..... 30

Instrument Development

Sample Selection

Field Procedures

Data Analysis

Study Limitations

CHAPTER IV: RESULTS..... 49

Frequency of School Return

General Characteristics of School Returners

Regression Analysis — Page

Separate Analysis by Place of Birth and School Status

Separate Analysis of School Effects on Respondents Who Were in High School When They Became Pregnant

Self-Reported Reasons for Not Returning to School

CHAPTER V: DISCUSSION..... 81

Soundness of the Theoretical Model

Demographic Variables

Educational Background Factors

Reproductive History

Opportunity Factors

Psychological Variables

Profile of School Returners and Non-Returners

Sources of Unexplained Variance

Implications for Future Research

REFERENCE LIST..... 95

REFERENCE NOTES..... 107

APPENDICES..... 110

A: Independent Variables With Operational Definitions and Hypothesized Association With School Return

B: Mail Survey Evaluation of the Interview Experience

C: Zero Order Correlation Matrix

LIST OF TABLES

		Page
Table 1:	Reasons for Non-Interview	34
Table 2:	Comparison of Interviewed and Non-Interviewed Women by Selected Variables	45
Table 3:	Kinds of Educational Programs to Which Women Returned Four Years After the Birth of Their First Child.	50
Table 4:	Educational Status of the 54 High School Returners by Date of Interview	50
Table 5:	Comparison of Returners and Non-Returners on Selected Variables With t-test Results for Differences In Mean Values	51
Table 6:	Percentages of Women With Selected Characteristics Who Returned to School After the First Birth and X^2 Results For Comparison With Non-Returners	53
Table 7:	Subgroup Regression: Standardized Partial Regression Coefficients and Squared Semi-Partial Correlations Relating School Return to Several Measures of Ethnicity	60
Table 8:	Subgroup Regression: Standardized Partial Regression Coefficients and Squared Semi - Partial Correlations Relating School Return to Several Measures of Living Situation	61
Table 9:	Standardized Partial Regression Coefficients and Squared Semi-Partial Correlations Relating School Return to Independent Variables Selected for the Final Model	63
Table 10:	Partitioning of the Proportion of Explained Variance Corresponding to Each Independent Variable in the Final Regression Equation into Direct, Joint and Total Effects on School Return	65
Table 11:	Cross-tabulation of School Status at Pregnancy by Subsequent School Return, Controlling for Place of Birth	66
Table 12:	Results of Regression Analysis Including Interaction Term for U.S. Born and Months of Pregnancy Spent in School	68
Table 13:	Separate Regression for Women Born in the Continental United States: Standardized Partial Regression Coefficients and Squared Semi-Partial Correlations Relating School Return to Selected Independent Variables	69

LIST OF TABLES (Cont.)

		Page
Table 14:	Separate Regression for Women Born Outside of the Continental United States: Standardized Partial Regression Coefficients and Squared Semi-Partial Correlations Relating School Return to Selected Independent Variables	70
Table 15:	Probabilities of School Return Associated With Specific Raw Score Values of Selected Interval-Level Independent Variables	72
Table 16:	Reported School Policy from Women Who Were in High School When They Became Pregnant	73
Table 17:	Educational Status at End of Pregnancy For Women Who Were in High School When They Became Pregnant	73
Table 18:	Separate Analysis of 66 Respondents Who Were in High School When They Became Pregnant: Percentages of Women With Selected Characteristics Who Returned to School After the First Birth and X^2 Results for Comparison With Non-Returners	74
Table 19:	Self-Reported Main Reason for Not Returning to School After the First Birth	77
Table 20:	Attributed Importance of General Reasons "Why Some Women Do Not Continue Their Educations After They Have A Baby" By Whether the Respondents Themselves Returned	78

LIST OF FIGURES

		Page
Figure 1:	Model of the Direct and Indirect Determinants of Educational Attainment From Status Attainment Research	5
Figure 2:	Model of the Determinants of Educational Continuation Status After the First Birth	6
Figure 3:	Hypothesized Causal Order of the Eight Independent Variables Selected for Regression With School Return	62
Figure 4:	Summary of Variables Included in the Final Model of School Return	82

Chapter I

INTRODUCTION

Purpose

This study was designed to ascertain the educational status of a group of former non-high school graduates three years after the birth of their first child, and to identify characteristics which distinguish women who returned to school from those who did not. It was conducted by means of structured home interviews with 160 women who had not yet graduated from high school when they became pregnant with their first child.

Extent of the Problem

Although the birth rate in the United States has been declining, the decline in rates for women under age 20 has been slower than for older women, with the result that births to teenagers account for an increasing proportion of total births. In 1975 there were 594,880 births to women under age 20, representing 18.9% of all births. This proportion varies greatly by race, and for non-white women, teenage births accounted for 30% of total births (Baldwin, 1977).

Contrary to other age categories, the birth rate to girls under age 15 has been rising since the early 1970's. In 1975 this rate increased one percent over the previous year, with a total of 12,642 births. In addition, the number and rate of out-of-wedlock births has been increasing in all age groups, and fewer young women are placing

their children for adoption (Baldwin, 1977). Despite the legalization of elective abortion in 1970, in 1973 in New York City alone there were 15,860 births to women under age 20, and 61.5% of these were out-of-wedlock (Pakter, 1974).

Perhaps the most frequently cited negative consequence of early childbearing is the premature disruption of schooling. The extent of this problem is not known, however, since school districts do not uniformly record reasons for dropping out (Stewart & Johnson, 1976) and policies regarding pregnant students vary even within states and counties (Warren, 1973).

In education, considerable attention has been paid to the characteristics and prevalence of high school dropouts. However, pregnant teens present a special case of dropouts since many have interrupted their schooling by force rather than by choice. Furthermore, the cross-sectional nature of most of these studies precludes an investigation of dropouts who later return to school.

Three bodies of literature address this question indirectly. Several demographic studies have included educational attainment as an independent variable in models of the determinants of age at marriage and fertility, with the result that early age at marriage, early childbearing and high fertility are known to be concomitants of low educational attainment. However, the causal direction in this process remains unclear.

Since continuation of school is one component of completed years of education, the sociological status attainment literature is also pertinent. However, despite two decades of extensive research into the antecedents and consequences of educational aspirations, plans and

attainment, women have been almost completely ignored in these studies and with them, the effects of childbearing, age at marriage and sex-role socialization.

Finally, from a combination of disciplines emerges a literature specifically addressing the problems of pregnant high school students. The majority of these medical, social work and educational reports either discuss changes in legislation and school policies, or describe and evaluate particular programs for pregant teens. While several of these measure program success as the number of teens who continue their education, few of them adequately compare returners and non-returners.

One notable shortcoming of each of the bodies of literature described above is the failure to consider the opportunity factors which may affect continuation of education after childbirth. The specialized studies of pregnant teenagers almost universally fail to introduce controls for differences in socioeconomic status (SES), or availability of childcare. The demographic studies include SES controls, but generally do not consider childcare, or attitudes of the respondents, their families, and friends, regarding return to school. While the status attainment literature demonstrates the importance of attitudes of "significant others" and one's own aspirations, it does not address the effects of childbearing on termination or continuation of education.

None of the literature reviewed considers school-related opportunity variables. We do not know to what extent pregnant students are aware of the availability of special educational projects, highschool equivalency or extra-mural programs, nor whether the knowledge of such programs distinguishes between those who continue in school and those who drop out and do not return.

Theoretical framework

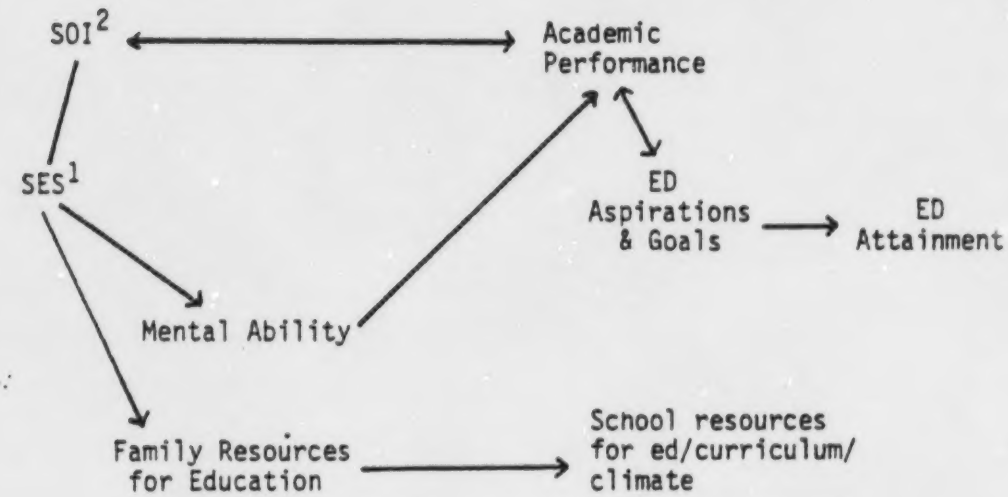
Since dropping out and returning to school can be seen as one component of the larger process of "status attainment" the body of sociological literature under this heading provided the basis for a theoretical framework. Two decades of extensive research into the antecedents and consequence of educational aspirations and attainment have led to the constuction of elaborate tested models, such as the one depicted in Figure 1. The model shows that family socioeconomic status has an important indirect affect on eventual attainment. Both inherited qualities such as mental ability, and social characteristics such as economic resources, affect an individual's educational aspirations and performance. Aspirations, in turn, have a direct effect on completed levels of schooling.

Because the bulk of status attainment research has been conducted on white, male high school students, other sources were used to add female-specific variables to the model. In this regard the demographic literature on the consequences of early childbearing was particularly useful for postulation of the effects of reproductive history and marital status.

Finally, a category of "opportunity variables" was added because of its intuited influence on the education of young mothers. This category includes such factors as reasons for leaving school, pregnancy policies, knowledge of opportunities to return, and availability of childcare. The resultant inter-disciplinary model of the educational consequences of early childbearing is presented in Figure 2.

Figure 1

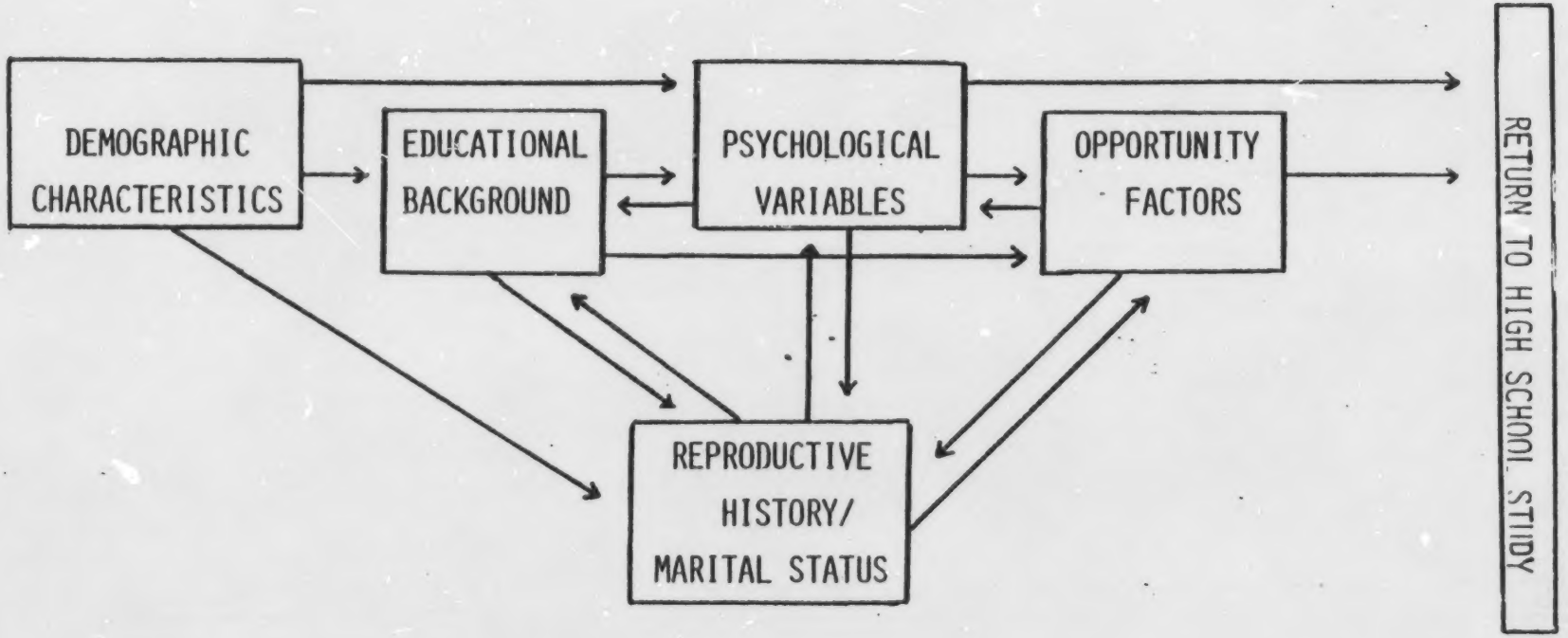
MODEL OF THE DIRECT AND INDIRECT DETERMINANTS OF EDUCATIONAL ATTAINMENT FROM STATUS ATTAINMENT RESEARCH



[1]Socioeconomic status
[2]Significant other influence

FIGURE 2

MODEL OF THE DETERMINANTS OF SCHOOL RETURN
AFTER THE FIRST BIRTH



Significance of the Study

It is often assumed that discontinuation of schooling is an automatic consequence of young motherhood due to restrictive school policies and the difficulties of combining motherhood and education. However, in recent years federal and state legislation prohibiting sex discrimination has eased restrictive policies. In the face of these new policies there have been few attempts to discover to what extent young women who discontinue their educations in order to have a child later return to school, rather than becoming permanent dropouts.

Another factor which complicates an assessment of school return after childbearing is the fact that many young women drop out of school before they become pregnant. A clear need exists for an inter-disciplinary model of the educational consequences of early childbearing which takes into account the timing of dropout, reasons for leaving school and the perceived or actual barriers to continuation.

The goal of the present study is to identify factors which differentiate women who continue high school after a pregnancy and live birth, from those who do not. The justification of this research lies in its implications for service programs. If we knew why some pregnant women are able to continue in high school while others are not, we could develop more effective counseling programs to prevent these young women from becoming permanent dropouts.

The study has implications for older women as well as teenagers. With the fundamental importance of a high school diploma in the United States it is important to observe what leads non-high school graduates of any age to resume their educations.

The specialized nature of the study sample limits the generaliz-

ability of findings to similar socioeconomic and ethnic groups. However, it is hoped that this attempt to develop a theoretical framework to explain school return among pregnant dropouts will serve as a model for replication elsewhere.

Chapter II

RELATED RESEARCH

School Policies and Legislation

The few statistics which exist concerning the prevalence of school-leaving because of pregnancy probably underestimate pregnancies to middle class girls since their parents can obtain private physician's certificates listing mononucleosis or "exhausion" as the reason for dropping out. (Osofsky, 1968) However, some indication of the magnitude of school termination due to pregnancy can be inferred from an examination of legislation and school district policies.

In the 1960's few special provisions were made for pregnant students, and school districts often prohibited them from attending regular classes. Atkyns (1968) conducted a questionnaire survey to compare school policy statements from 127 of the 153 superintendants of the nation's school districts. He found that although restrictive policies had been eased since the 1940's, in 1966 44% of the districts surveyed denied attendance to unmarried pregnant students, and few had studied the extent of the problem in their districts. At that time even maternal homes made inadequate educational provisions for young mothers. In a New York State survey Osofsky (1968) found that no teachers were available in the majority of maternity homes, and those which had an educational program employed a teacher only one to two days per week.

In 1969 the editor of the journal, Nation's Schools (1969), conducted a survey of a 4% sample of school administrators in the fifty states to assess policies for pregnant school girls. Only 9% of those responding reported that their policy was "no action". One third of the districts immediately expelled students, or expelled them once the pregnancy was noticable. Fifty-one percent barred them from classes, but made provisions for home study or transfer to a special facility.

The small number of educational programs for pregnant students in the 1960's was a direct result of a lack of state funds for this purpose. Wurtz & Fergen (1970)queried the heads of 48 state departments of education in 1969 and found that thirty-three states provided some reimbursement to school districts for the education of pregnant students, through funds for special education categories such as aid to the handicapped and the emotionally disturbed. In 1970 Childs (1972) noted that, although all state constitutions endorsed the right for free education of juveniles, only seven states made specific statutory provisions for pregnant students.

There is also evidence that restrictive policies reflected the prevailing attitudes of educators. Kipp & Griggs (1975) cite a 1970 survey of U.S. teachers which found that those in small communities favored home instruction for pregnant girls, while teachers from large communities preferred special schools.

Restrictive school policies, teacher attitudes favoring separation, and the provision of funds from categories for aid to the handicapped and disturbed, served to reinforce rather than repudiate the moralistic basis for legislative exclusion of pregnant girls from the public schools. The prevailing view seemed to be that the presence of

pregnant students would "corrupt" or "taint" their classmates (Garber, 1970). Even a federal court decision which held that students must be permitted to return after the birth of a child, included an admonition that such a student should be readmitted after "she has the baby and has the opportunity to realize her wrong and rehabilitate herself"(Garber 1970, p.81).

The situation began to improve somewhat in the early 1970's with the awareness that pregnancies to school-age students was a growing problem in the U.S. However, school districts were often still unaware of the extent of the problem because of the lack of accurate statistics on school-leaving due to pregnancy. Wallace et al. (1973) surveyed the health officers and superintendents of 130 U.S. cities in 1971, and found that 98 cities reported some form of special educational program for pregnant school girls. However, the respondents were unaware of the number of such programs in their cities or the coverage. In addition, many of the special programs had waiting lists for acceptance.

In 1976 Goldstein & Wallace (1978) repeated this survey to assess policy changes since 1970. By that date 100 of the 125 cities responding had some type of special educational program. Educational services were listed as an "unmet need" in 25 of the cities, including the need for "continuing education during and after pregnancy, programs for those teenagers not interested in academic programs, home tutoring, special education for the retarded, teen-parent centers, and life sciences courses" (Goldstein & Wallace, 1978, p.51).

The most commonly cited reasons for exclusionary policies from

school officials have been the desire to "protect" other students from the influence of "promiscuous behavior" and the need to protect the pregnant student's physical and mental condition. (Children's Defense Fund, 1974). In 1971 the latter rationale was rejected by a federal court ruling to the effect that "the dangers in attending school are no worse... than for a non-pregnant girl" (Children's Defense Fund, 1974, p.69).

The most important step in favor of continuing education of pregnant students came with Title IX of the 1972 Education Amendments. These provisions, which became effective in 1975, held that no school receiving federal funds could exclude a student "on the basis of pregnancy or a pregnancy-related condition" (Baldwin, 1977). The Amendments further state that "teenage pregnant girls and young mothers are entitled to complete their education with full access to the resources and facilities provided by the public school system (Goldmeier, 1976, p.20). Students can only be assigned to special programs through voluntary requests or physician certification of inability to continue in the normal program. Hendrixson (1979) summarizes the provisions as follows:

> a pregnant student 1) may not be expelled from school, 2) may not be required to attend a special school for pregnant students, 3) may not be barred from any program, course (including physical education), or extracurricular activity, 4) may not be required to take special courses in child care related topics unless those courses are required of every other student in the school 5) may not be required to leave school at a certain time before the birth of the child or be required to remain out of school for a certain length of time afterwards, and 6) may not be required to furnish notes from her physician that she be allowed to continue or reenter a course of study

> unless such notes are required of all students relationship to illness or intended surgery. In addition, a special instructional program for "homebound" students must be made available to the pregnant student, based on the same criteria as programs for other students (Goldstein, 1978 p.664)

New York City Educational Policies

Since 1967 the New York City Board of Education has sponsored special educational centers for pregnant girls. (Kipp & Griggs,1975) In 1973 there were six such centers serving 900 girls from the second month of pregnancy to after delivery. Each center serves approximate ly 150 girls with an assistant principal, eight teachers, a guidance counselor, social worker, psychologist and five paraprofessional aides.

As of March, 1978 the New York City Board of Education had five special high schools for pregnant girls one each in the Boroughs of Queens, Manhattan and the Bronx, and two in Brooklyn[1]. Their combined enrollment was 700 students. Funds for these schools are provided by the Division of Special Education.

New York State law confirms the federal regulations requiring that pregnant students be offered the option of remaining in their regular school[2]. However, individual schools have subtle ways of denying this right. If the school has stairs rather than an elevator, school authorities may state that the facilities are especially

---

[1] Information on the Board of Education special schools was obtained from Mr. Larrier, the Program supervisor of the Special Education Division in a telephone conversation on March 16, 1978.

[2] Ironically, not all Board of education personnel are aware of this law. In a conversation with persons from the Board,s Bureau of Education Statistics I was told that "pregnant students are not permitted to attend regular schools."

hazardous for pregnant students and exclude them. Pregnant students often cannot keep their laboratory and prenatal examination appointments without missing classes. Since ten days of school absence are grounds for failing in the public school system, this requirement is another subtle mechanism for denying continuation.

Other Theories of School Attrition Among Pregnant Students

Exclusionary school policies are not the only cause of school-leaving among pregnant adolescents. An alternative theory, or one which may pertain to only some students, is that pregnancy is an excuse for dropping out on the part of unmotivated students. This theory is difficult to test since the same factors which predispose a woman to early pregnancy are likely to be associated with school performance and educational aspirations. However, some authors argue tha adolescent pregnancy is the result of a conscious or unconscious desire to leave school and/or parental authority. Cattanach (1976) interviewed all of the girls in a Wisconsin school district who left school because of pregnancy between 1973 and 1975, and noted that 70% had become "intentionally pregnant', ie. they were not surprised by the pregnancy, and had hoped it would occur. Reasons for desiring pregnancy included the wish to escape an unpleasant home situation, dislike for school, desire to 'trap' a mate, or to prove womanhood. However, other studies have found that adolescent pregnancy is most often unplanned, and is not an excuse for leaving school (Furstenberg 1976).

An alternative explanation of school attrition among pregnant teenagers comes from the "status-conflict hypothesis" (Furstenberg, 1976) or "role transition theory" (Bacon, 1974) which postulates that assumption of the motherhood role brings on stresses which cause school-leaving. Bacon (1974) discusses motherhood as a critical life event during which new roles are assumed and old ones abandoned. If this role transition occurs prematurely, "it is probable that a stress engendering acceleration of role transitions will lead to circumstances meeting the label social pathologies" (p. 333). One of these "social pathologies" is discontinued education. In a similar vein, Hobart (1962) notes that the sociological consequences of adolescent pregnancy include disruption of relations with reference groups and possible rejection by family, peers and teachers. Baizerman et al. (1971) attribute such disruption to "primitive social attitudes which hold that a pregnant teenage deserves any misfortune that befalls her" (p.4). McDonald(1976) mentions the stress in relationships with parents which often accompanies adolescent pregnancy, and Rossi (1968) notes that role transition problems can combine to produce a "depressed sense of selfworth, if not actual personality deterioration" (p. 26).

Furstenberg (1976) describes the difficulties faced by a highschool student who wishes to resume her education after an interruption for childbearing which puts her out of phase with her peers:

> "In order to reenter school she is often required to drop back a year, which both defines her as a failure and removes her from her former friends and classmates, Even if she returns to her former class, she has grown unfamiliar with school routines. This unfamiliarity may breed doubts as to whether she is capable of resuming her former status, particularly if her scholastic abilities were modest to begin with (p. 142).

Even if one does not accept the psychological stress problems hypothesized by role transition theorists, there are more obvious barriers to continued schooling posed by pregnancy. These include problems of financial support and child care arrangements while the mother continues her education. Anderson et al. (1966) contacted 123 Buffalo women who left high school because of pregnancy and found that 101 wanted to return to school, but 66% could not because of inadequate child care arrangements.

Goldstein and Wallace (1978) queried health officers and school superintendents in 125 cities on dropouts from special schools for pregnant girls. Reasons most commonly cited for dropping out included "lack of interest, lack of day care, and medical or home problems " (Goldstein & Wallace, 1978, p. 51). Even when institutional or familiar child care arrangements can be made, there may be pressure from parents or peers for the mother to spend time with her infant rather than pursuing her own interests As Rossi (1968) notes, there has been far more societal concern with issues of child development than with the effects of childbearing on young mothers.

Thus, while some teenagers may use pregnancy as an excuse to leave school, many others drop out due to problems of role transition, exclusionary school policies, or social pressures favoring full-time motherhood over personal development.

Resumption of Schooling After Pregnancy

Regardless of why pregnant students interrupt their educations,

the next logical question is whether they return to school or become permanent dropouts, and what distinguishes those who continue their education from those who do not.

There are three bodies of literature which directly or indirectly help us to estimate the extent of continued schooling by pregnant teenagers, and what factors might be associated with resumption of education. These include the dropout literature, demographic studies of the consequences of early childbearing, and small evaluative studies of special educational programs for pregnant teens. Each will be reviewed separately. Finally, status attainment research will be reviewed. Although it does not help us estimate return to school by pregnant adolescents, this body of literature is relevant for its attention to the independent variables which explain ultimate educational attainment for males and females.

Dropout Studies

Unfortunately, we know very little about the characteristics of dropouts who return to school because of the cross-sectional nature of most dropout studies. The few longitudinal studies which include women are described below.

In 1964 Combs and Cooly (1968) followed 3,681 high school dropouts and compared them with high school graduates who did not go on to college. Three quarters of the female dropouts cited marriage as the reason for leaving school, and 56% stated that they regretted not finishing. However, only 16% of the female dropouts went back to regular or vocational school, as compared to 38% of the controls. Controls also scored higher on 8 scales of self-perception. Female dropouts tended to come from lower socioeconomic strata than controls, although this difference was

not found for males. Similarly, in a follow-up study of 48 dropouts eleven years later, Greene (1962) found that high school graduates were twice as likely to have had some further education. Eighteen of the dropouts returned to some form of schooling, but only 12 actually completed their course work.

In 1962 Saleem and Miller (1963) surveyed Syracuse school records to identify junior and senior high dropouts. They focused on 60 "returners" out of 625 dropouts and compared them with 565 "permanent dropouts". (Unfortunately their information on continued schooling was incomplete, so some of the permanent dropouts could have been misclassified.) They found that the factors which characterized female returners included older age at school-leaving, less age-grade retardation, and better school performance.

Between 1962 and 1966 Hathaway et al.(1969) followed 5,628 girls who had been interviewed ten years earlier in a Minnesota study of adolescent personality and behavior. They located 812 (99.5%) of the 816 girls who were high school dropouts and compared them with 812 graduates from the same schools. Thirty-eight percent of the dropouts cited marriage as their reason for leaving school, 22% mentioned "lack of interest", and 15% listed nonmarital pregnancy. Five percent of the dropouts had returned to school in the ten-year period, but the authors were unable to associate school return with measures of IQ or current socioeconomic status.

Demographic Studies of the Consequences of Early Childbearing

Concern over the social consequences of adolescent childbearing has led to four studies of direct relevance to the proposed research:

the work of Furstenberg (1970, 1976a, 1976b); Presser (1975, 1976); Waite and Moore (1977, 1978) and Card and Wise (1977).

Furstenberg conducted a six-year follow-up of 404 adolescent mothers who had delivered in a Baltimore hospital, as well as their partners, progeny and parents between 1968 and 1972. He compared the experience of the young mothers with that of 301 of their former classmates. Five years after giving birth to their first child, 49% of the women in the pregnant group has graduated as compared to 86% of the controls. These differences are particularly striking when it is noted that the attainment of the classmates coincides with the original educational aspiration level stated by the young mothers ar their initial interview. However, the educational disadvantage of the pregnant group does not warrant the conclusion that adolescent parenthood precludes continued schooling, since Furstenberg reports that 70% of the young mothers had returned to school at some point during the five years. Of the non-high school graduates, 20% returned, only to drop out a second time, and 8% were still in school at the time of the last follow-up interview (p. 160).

Furstenberg's findings also contest the theory that adolescent pregnancy is an excuse for dropping out of school. Three fourths of the teenagers in his sample reported that they enjoyed school, and most aspired to further schooling.

> All but 10 adolescents reported that they hoped to complete high school, and nearly half looked forward to some type of higher education. While many conceded that in all likelihood these aspirations would not be realized, 84 percent still expected to complete high school, and over one quarter anticipated finishing some higher education. A large number of the young mothers failed to reach their expected goals (p.160).

Factors positively associated with continued education of adoles-

cent mothers included socioeconomic status, previous academic performance, level of educational ambition and degree of parental encouragment for continued schooling. Unsurprisingly, the demands, of marriage, childcare and continued childbearing were strongly related to ability to return. Those least likely to resume their educations were women who were married and had subsequent pregnancies. In a later analysis (1978) Furstenberg found that teenagers who lived with their parents, rather than alone or with a spouse, were slightly more likely to have returned to highschool and to have graduated.

Harriet Presser (1975, 1976) conducted a similar study in New York with a random sample of 408 women who had their first child in 1970, 1971, or 1972. The women were first interviewed in 1973, with a follow-up of 358 women in 1974 and 310 in 1975.

A majority of the women were under age 20 and two thirds of those not in school at the first interview were non-high school graduates.[1] The teenage mothers were more likely to have returned to school by the first interview than were those age 20 or older. "Twenty-five percent of the teenage mothers, 7 percent of those aged 20-23 at the first birth, and 6 percent of those aged 24-29" were attending school when their children were between seven months and 2 1/2 years old"(p. 23).

As of this writing Presser had not yet analyzed the determinants of continued schooling, although she did study the relationship between several achievement and aspirations variables and age at first birth. Substantially more of the women who became mothers at ages 15-19 desired

---

[1]Presser's data do not permit analysis of the proportion of the total sample which were non-high school graduates.

further schooling than women age 20 or older, (although it should be noted that the adolescents also had lower attainment at the time of their first birth). More of the teenager mothers also stated that they planned to return to school within five years.

In Presser's study it is not clear whether the initial educational disadvantage of young mothers persists over time, or whether the teenager mothers later returned to school in numbers proportionate to those who postponed childbearing. Waite and Moore (1977, 1978) addressed this question by analyzing data from the National Longitudinal Study (NLS) of the Labor Market Experiences of Young Women. The study involved six waves of interviews of 5,000 women ages 14-24 between 1968 and 1973.

The authors examined differentials in educational attainment at ages 18, 21 and 24, and found that age at first birth was the strongest predictor of ultimate attainment in their multivariate model. Mean educational attainment at age 24 ranged from 8.9 years of schooling for women who had their first child before they were 15, to 13.5 years for women who still had no children at age 24.

After controlling for age at first birth, the best predictors of educational attainment at the three cut-off points included "home culture" (number of newspaper & magazines in the home and library membership when growing up), and parents' educational goals for the respondents. Other variables for which strong positive associations were reported at two of the three cut-off points were perceived encouragement from parents and teachers for post-secondary education, and enrollment in a college-preparatory curriculum in high school.

not found for males. Similarly, in a follow-up study of 48 dropouts eleven years later, Greene (1962) fo d that high school graduates were twice as likely to have had some further education. Eighteen of the dropouts returned to some form of schooling, but only 12 actually completed their course work.

In 1962 Saleem and Miller (1963) surveyed Syracuse school records to identify junior and senior high dropouts. They focused on 60 "returners" out of 625 dropouts and compared them with 565 "permanent dropouts". (Unfortunately their information on continued schooling was incomplete, so some of the permanent dropouts could have been misclassified.) They found that the factors which characterized female returners included older age at school-leaving, less age-grade retardation, and better school performance.

Between 1962 and 1966 Hathaway et al.(1969) followed 5,628 girls who had been interviewed ten years earlier in a Minnesota study of adolescent personality and behavior. They located 812 (99.5%) of the 816 girls who were high school dropouts and compared them with 812 graduates from the same schools. Thirty-eight percent of the dropouts cited marriage as their reason for leaving school, 22% mentioned "lack of interest", and 15% listed nonmarital pregnancy. Five percent of the dropouts had returned to school in the ten-year period, but the authors were unable to associate school return with measures of IQ or current socioeconomic status.

Demographic Studies of the Consequences of Early Childbearing

Concern over the social consequences of adolescent childbearing has led to four studies of direct relevance to the proposed research:

the work of Furstenberg (1970, 1976a, 1976b); Presser (1975, 1976); Waite and Moore (1977, 1978) and Card and Wise (1977).

Furstenberg conducted a six-year follow-up of 404 adolescent mothers who had delivered in a Baltimore hospital, as well as their partners, progeny and parents between 1968 and 1972. He compared the experience of the young mothers with that of 301 of their former classmates. Five years after giving birth to their first child, 49% of the women in the pregnant group has graduated as compared to 86% of the controls. These differences are particularly striking when it is noted that the attainment of the classmates coincides with the original educational aspiration level stated by the young mothers ar their initial interview. However, the educational disadvantage of the pregnant group does not warrant the conclusion that adolescent parenthood precludes continued schooling, since Furstenberg reports that 70% of the young mothers had returned to school at some point during the five years. Of the non-high school graduates, 20% returned, only to drop out a second time, and 8% were still in school at the time of the last follow-up interview (p. 160).

Furstenberg's findings also contest the theory that adolescent pregnancy is an excuse for dropping out of school. Three fourths of the teenagers in his sample reported that they enjoyed school, and most aspired to further schooling.

> All but 10 adolescents reported that they hoped to complete high school, and nearly half looked forward to some type of higher education. While many conceded that in all likelihood these aspirations would not be realized, 84 percent still expected to complete high school, and over one quarter anticipated finishing some higher education. A large number of the young mothers failed to reach their expected goals (p.160).

Factors positively associated with continued education of adoles-

cent mothers included socioeconomic status, previous academic performance, level of educational ambition and degree of parental encouragment for continued schooling. Unsurprisingly, the demands, of marriage, childcare and continued childbearing were strongly related to ability to return. Those least likely to resume their educations were women who were married and had subsequent pregnancies. In a later analysis (1978) Furstenberg found that teenagers who lived with their parents, rather than alone or with a spouse, were slightly more likely to have returned to highschool and to have graduated.

Harriet Presser (1975, 1976) conducted a similar study in New York with a random sample of 408 women who had their first child in 1970, 1971, or 1972. The women were first interviewed in 1973, with a follow-up of 358 women in 1974 and 310 in 1975.

A majority of the women were under age 20 and two thirds of those not in school at the first interview were non-high school graduates.[1] The teenage mothers were more likely to have returned to school by the first interview than were those age 20 or older. "Twenty-five percent of the teenage mothers, 7 percent of those aged 20-23 at the first birth, and 6 percent of those aged 24-29" were attending school when their children were between seven months and 2 1/2 years old"(p. 23).

As of this writing Presser had not yet analyzed the determinants of continued schooling, although she did study the relationship between several achievement and aspirations variables and age at first birth. Substantially more of the women who became mothers at ages 15-19 desired

---

[1] Presser's data do not permit analysis of the proportion of the total sample which were non-high school graduates.

further schooling than women age 20 or older, (although it should be noted that the adolescents also had lower attainment at the time of their first birth). More of the teenager mothers also stated that they planned to return to school within five years.

In Presser's study it is not clear whether the initial educational disadvantage of young mothers persists over time, or whether the teenager mothers later returned to school in numbers proportionate to those who postponed childbearing. Waite and Moore (1977, 1978) addressed this question by analyzing data from the National Longitudinal Study (NLS) of the Labor Market Experiences of Young Women. The study involved six waves of interviews of 5,000 women ages 14-24 between 1968 and 1973.

The authors examined differentials in educational attainment at ages 18, 21 and 24, and found that age at first birth was the strongest predictor of ultimate attainment in their multivariate model. Mean educational attainment at age 24 ranged from 8.9 years of schooling for women who had their first child before they were 15, to 13.5 years for women who still had no children at age 24.

After controlling for age at first birth, the best predictors of educational attainment at the three cut-off points included "home culture" (number of newspaper & magazines in the home and library membership when growing up), and parents' educational goals for the respondents. Other variables for which strong positive associations were reported at two of the three cut-off points were perceived encouragement from parents and teachers for post-secondary education, and enrollment in a college-preparatory curriculum in high school.

While Furstenberg, Presser and Waite and Moore all directly addressed the issue of who returns to school, none of these studies included questions on knowledge of opportunities to return or perceived barriers to resuming education. Nonetheless, their findings provide the most direct evidence available of family background factors and sociological variables associated with return to school after childbearing.

Although Card and Wise (1977) have not compared pregnant dropouts who return to school with non-returners, their analysis of Project Talent data constitutes the best national study of the educational consequences of adolescent childbearing. The initial Project Talent sample was comprised of 4.5% of all U.S. highschool students in 1960, with separate follow-up waves at five and eleven years. Card and Wise constructed several age-at first-birth categories, and matched mothers and non-mothers in each group for initial socioeconomic status, ethnicity, academic ability, and ninth grade educational expectations. This careful matching permitted analysis of whether the ultimate educational differences between adolescent mothers and classmates who postponed childbearing (such as those observed by Waite and Moore) are due to initial differences, or seem to be the result of the experience of early motherhood. Their results were striking in that:

> Only one-fifth of women who had a birth before age 18 received their diplomas at age 18, compared to nearly three-fourths of those first child was born when they were 18 or 19 and nine-tenths of those who had no children before age 20. By age 29, about half of the youngest childbearers had obtained diplomas, compared to nearly all of those who postponed childbearing until their 20s.

One other demographic study is of indirect relevance to the proposed research because of the similarity of the issues addressed. That is the Bumpass and Davis (1976) study of educational attainment after

marriage. The authors used 1970 National Fertility Survey (NFS) data on 6,700 ever married women under age 45 to examine post-nuptial education. Twenty-seven percent of the non-high school graduates had returned to high school since marriage, and 41% were either attending or intended to enroll. When academic and vocational schooling were combined, 30% of this group had returned to school, and 48% had either returned or said they intended to return at some time in the future.

Similar to Saleem and Miller's (1963) findings regarding the continued schooling of dropouts, Bumpass and Davis found for non-high school graduates, the higher the level of attainment at marriage, the greater the likelihood of return. Other factors associated with school return included age at marriage, marital status, religion, race, and sex role attitudes. The age findings are in accord with the results mentioned earlier from studies of education after childbearing. The younger the women at the time of marriage, the lower her later educational attainment. Like Furstenberg, Bumpass and Davis found that married women were less likely to return to school than their separated, or divorced peers.[1] They explain this by noting that:

> divorced and separated women are likely to be thrown upon their own resources earlier in their life cycle, and hence may be more likely to upgrade their educations to prepare for a potentially long period of self-support. (p.172)

Both black and white women with "traditional" sex role orientations were less likely to have returned to school, and for white only, being Protestant or Catholic was negatively associated with continued schooling. Religion was not associated with education for the smaller

---

[1] Furstenberg's comparison included single women, unlike the Bumpass and Davis study, which was a sample of ever-married women.

sample of black women in the study. These women had lower rates of initial attainment, but were still more likely to return to school than whites. Some of this relationship may be due to the more modern sex role orientation of black women found by other authors.

Special Educational Programs for Pregnant Teens

The literature on adolescent childbearing abounds with descriptions of special prenatal and postpartum programs designed to reduce medical complications and encourage return to work and school. Most of these studies involve small, self-selected samples and the presentation of results without adequate control group comparisons. Heller and Kiraly (1973) note that in 1973 there were 170 such special educational programs in the U.S., but that few had been evaluated. A few representative projects are described below.

A typical methodological problem in special program evaluations is found in McCarthy and Syropoulos' (1971) report of the success of a 1969 Detroit multiservice program for pregnant teens. The authors state that girls were "carefully selected for admission so that those given this opportunity were the ones judged most likely to take advantage of the program" (p.9). They then go on to attribute the continued schooling of the participants to project effectiveness.

A combination of authors have published reports of a follow-up study of 180 girls who delivered their first child at Yale-New Haven Hospital between 1967 and 1969 (Foltz, 1972; Jekel, 1973; Klerman, 1973). The educational experiences of "McCabe" program participants was compared with that of a Hartford educational program, and with teenager prenatal patients at Yale-New Haven Hospital before the McCabe

program was initiated. In this study the authors were at least cognizant of most of the major methodological problems. The greatest of these was the noncomparability of the control groups.[1] In addition, interviewers were arbitrarily, rather than randomly assigned, and educational results were reported without controlling for socioeconomic status or childcare availability. With these reservations in mind, the intra-program comparisons of immediate school returners and non-returners are of most interest than inter-program comparisons. School status two months postpartum was positively associated with level of educational goals, regularity of clinic attendance, and appropriateness of grade (i.e. lack of age-grade retardation). Younger girls were also more likely to be in school or to have graduated, although the authors attribute this to their initial school status; older girls were more likely to have dropped out of school before their clinic registration.

Finally, Furstenberg's (1976) follow-up study of pregnant teenagers, which was described in the section on demographic studies, warrants mention in the section as well for his comparison of participants at a special facility (The Edgar Allan Poe School) for pregnant students, with girls who remained in their regular schools. He notes that the two populations were not necessarily comparable, and advises caution in interpretation of group differences.

---

[1] McCabe intake was done through the hospital and included high school dropouts unlike the Hartford program, where intake was done through the schools. The latter program experienced significantly greater loss to follow-up, and had younger clients. The intra-hospital comparisons of different cohorts and without attention to historical influences, are equally problematical.

> Overall the patterns of educational achievement were very similar. Approximately one-fourth of each group dropped out after delivery...although Poe students did have a better record of graduating from high school, the difference (70% versus 59%) was not sizable. The students who had attended regular classes were actually more likely still to be in school at the time of the five-year follow-up, but again the disparity between the groups was not large (32% versus 19%. (p. 143).

Status Attainment Research

Dropping out and returning to school can be seen as one component of the larger process of "status attainment." In the sociological literature this is the process by which individuals obtain the abilities, aptitudes and values which determine their aspirations and ultimately lead to educational and employment levels. These levels in turn determine one's status in terms of income, prestige and personal satisfaction. Although it does not help us to estimate return to school by pregnant adolescents, this body of literature is relevant for its attention to variables other than childbearing which affect ultimate educational attainment for males and females.

Major research into the determinaants of educational attainment began in the early 1960's with a series of intergenerational status transmission studies designed to evaluate the effect of a father's educational and occupational level on his son's eventual attainment (Blau & Duncan, 1967; Duncan, 1968; Duncan & Featherman, 1972a; Duncan & Featherman, 1972b; Sewell, Haller, & Portes, 1969).

These studies have provided us with a profile of males who attain the highest levels of schooling. The typical male with high educational

attainment comes from a small family with a comfortable income. His parents have gone to college and secured good jobs, and they encourage their son to do the same, He, in turn, scores well on intelligence tests, does well in school and follows a college preparatory curriculum. Both he and his classmates have high educational and occupational goals.

There is some evidence that the educational attainment model for women differs from that of men. The first national status attainment study to directly address the issue of sex differences in educational experiences was a longitudinal study of high school sophomores interviewed in 1955 and reinterviewed in 1970. Alexander and Eckland (1974) found that men went further in school than women regardless of academic ability, socio-economic status, educational goals, academic self-concept, academic performance, high school curriculum, or encouragement from family and friends. They noted that although females do better in school than males and rate their ability higher, they are less likely to be in a college preparatory curriculum and experience lower eventual educational attainment.

Treiman and Terrell (1975) compared the results of two different studies to distinguish between the antecedents of male and female educational and occupational status. Contrary to Alexander and Eckland, they found that socioeconomic status was equally important for the educational attainment of both men and women, but that mother's occupation was a slightly better predictor of female attainment than father's occupation. The female respondents' own work experience was also associated with completed schooling. Despite social class similarities, the educational attainment of nonworking women was more influenced by parental socioeconomic status than that of working women. To explain

this the authors hypothesize that "the factors which lead women to break away from family expectations concerning educational attainment are the same factors which lead them to reject traditional sex role expectations about women in the labor force" (p.178). An Alternative explanation is that for non-working women, the same opportunity factors which kept them out of the work force prevented further schooling (i.e. income level, childbearing and childcare availability).

The few status attainment studies which have included women have generally ignored variables with sex-specific effects such as age at marriage and childbearing. This may have been due to the assumption that educational attainment precedes fertility. Several authors have pointed out the need for models which apply to women (Alexander & Eckland, 1974; Haller & Portes, 1973; Treiman & Terrell, 1975), and which include not only marriage and fertility variables, but also consideration of their timing in relation to other events in the life cycle. Alexander and Eckland (1974) make a forceful argument for the incorporation of these variables with their comment that current status attainment models do not account for observed sex liabilities.

> The explanation no doubt requires extending the status attainment model to include factors typically not considered in the study of males. This might involve the addition of marriage and fertility variables, 'sex role specific' attitudes and socialization influences, and perhaps institutional discrimination as well...In its present form (the attainment model) is hardly at all informative of the manner in which sex inequalities develop or are maintained (p. 680).

Wolf's (1976) finding that, unlike men, women experience no net increase in occupational status during the childbearing period, further demonstrates the importance of such contingencies.

this the authors hypothesize that "the factors which lead women to break away from family expectations concerning educational attainment are the same factors which lead them to reject traditional sex role expectations about women in the labor force" (p.178). An alternative explanation is that, for non-working women, the same opportunity factors which kept them out of the work force prevented further schooling (i.e. income level, childbearing and childcare availability).

The few status attainment studies which have included women have generally ignored variables with sex-specific effects such as age at marriage and childbearing. This may have been due to the assumption that educational attainment precedes fertility. Several authors have pointed out the need for models which apply to women (Alexander & Eckland, 1974; Haller & Portes, 1973; Treiman & Terrell, 1975), and which include not only marriage and fertility variables, but also consideration of their timing in relation to other events in the life cycle. Alexander and Eckland (1974) make a forceful argument for the incorporation of these variables with their comment that current status attainment models do not account for observed sex liabilities.

> The explanation no doubt requires extending the status attainment model to include factors typically not considered in the study of males. This might involve the addition of marriage and fertility variables, 'sex role specific' attitudes and socialization influences, and perhaps institutional discrimination as well...In its present form (the attainment model) is hardly at all informative of the manner in which sex inequalities develop or are maintained (p. 680).

Wolf's (1976) finding that, unlike men, women experience no net increase in occupational status during the childbearing period, further demonstrates the importance of such contingencies.

Chapter III

PROCEDURE

Instrument Development

Using the theoretical framework described in Chapter I, several categories of variables were selected for their hypothesized association with school return after childbirth. The dependent variable was defined as any formal high school education or equivalency study within four years of the first birth. The questions from which this measure was to be derived included a complete educational history including names and locations of schools, dates of attendance and courses of study.

Independent and intervening variables were grouped into five categories as follows:

Demographic Characteristics

Socio-economic status of family of origin
Ethnicity
Place of Birth
Family size
Birth order
Religion

Educational Background Factors

Educational attainment prior to pregnancy
Educational aspirations
Career aspirations
Academic performance
Attitudes toward school
Significant other influence

Reproductive History

Age at first birth
Union status
Subsequent pregnancies
Desire for children

Opportunity Factors

Living Situations
Income-related variables
Childcare availability
Knowledge of opportunities to return
Reasons for non-return or return
School effects

Psychological Variables

Locus of control
Sex role attitudes

Appendix A contains the operational definitions of each of these variables and the direction of their hypothesized association with school return. Most of the operational definitions of independent variables have clear precedents in the demographic, status attainment or psychological literatures. The exception to this is the category of "opportunity factors in school continuation." Since few of these variables have been measured previously, their operational definitions were developed after a thorough review of the school continuation literature.

The variables described above were integrated into a questionnaire as a series of structured, open-ended and self-administered items. Before actual fieldwork began the instrument was revised several times based on the results of pre-tests with women who has delivered their first child at Presbyterian Hospital in 1974 or 1976. The final instrument took approximately 90 minutes to administer.

Sample Selection

The original population from which the sample was drawn consisted of a total of 661 women who delivered their first child on the wards of the Presbyterian Hospital between January 1 and December 31, 1975. From this population a subsample was selected of 275 Black and Hispanic women

who were non-high school graduates when they became pregnant. White women were not included since they comprised only six percent of the sampling universe.

Selection of the sample in this manner thus introduced controls for the following variables:

1. Occurrence of a first birth
2. Historical factors influencing return to school after the first birth
3. Geographical control which standardizes availability of programs, facilitating school re-entry

To some extent the sampling design also controlled for socio-economic status, since hospital ward patients generally represent lower income categories of women than semi-private or private patients.

Since all women on the hospital wards are counseled for family planning, certain reproductive and demographic characteristics were recorded on a routine counseling form. These forms were used to identify all women who delivered their first child during the period of interest. The unit number recorded on each form was used to pull the hospital chart for each woman to secure her address and telephone number. An additional source of address information was obtained from the hospital birth registration records for 1975.

Using addresses obtained from the charts, a letter was written to each potential respondent stating that we were conducting a study of the educational consequences of childbearing, and requesting that she call us to schedule an interview appointment. An attempt was made to locate respondents who had moved by securing forwarding addresses from the Post Office, making telephone inquiries, reviewing Child Health Station patient files, and consulting Medicaid records. When necessary, a second attempt was made by calling residents at the respondent's former

address to make inquiries regarding her new address. Those women who did not call to schedule interview appointments were contacted in person by project interviewers.

Field Procedures

A combination of male and female volunteer and paid interviewers were used to gather the data. All interviewers underwent thorough training in field tracking and interviewing techniques. The questionnaire was printed in both English and Spanish, and all Spanish-speaking respondents were contacted by bilingual interviewers.

The fieldwork was conducted between July 1 and December 31 of 1978. Since respondents had given birth throughout the calendar year of 1975, follow-up time ranged from 33 to 47 months after the first birth. By the utoff point of December 31, 1978, 160 respondents had been located and interviewed. This represented 58.2% of the 275 cases put into the field. Reason for non-interview are listed in Table 1 .

Mail survey evaluation forms were sent to selected respondents who had consented to be interviewed to assess their opinion of the study. Approximately one quarter of the mail survey forms were returned, and of those received, the evaluation was generally very positive. (See Appendix B)

Table 1

REASONS FOR NON-INTERVIEW

Reasons	Percent
Moved out of study area	7.5%
Never home despite repeated callbacks	12.4
Unable to trace correct address for respondents	31.6
Refused Interview	7.5
Fieldwork ended before interview could be secured	37.6
Special problem [1]	3.4
TOTAL	100.0%

[1] e.g Deaf mute or severely retarded respondent

Data Analysis

Approximately four months were devoted to editing completed questionnaires, coding and cleaning the data and collapsing and deriving variables in preparation for analysis. The amount of time dedicated to this process was a result of the length of the questionnaire (85 pages), the fact that it contained more than 500 variables and the need to translate open ended responses from Spanish to English for over a third of the interviews.

As the questionnaires were logged in, they were divided among students and project staff for two edits. Students checked for the accuracy of precoded responses to structured questions, recorded census occupation and occupational prestige codes, and entered scores on some of the self-administered psychological tests. Project staff then reviewed the steps listed above, categorized and coded open-ended responses

The data were transferred to computer cards, verified, and cleaned by identification and correction of illegal codes and inconsistencies. In most cases this was done by consulting the file of questionnaires, although in some cases an attempt was made to contact respondents to fill in missing values.

After analysis of the frequency distribution, variables were re-coded into working form by excluding unknown values and collapsing values into categories which made theoretical sense and maximized cell size. Several other special variables were derived by combining two or more variables.

After data preparation, work was begun on the research question of the interest, namely, the relative contribution of each of the

independent variables in the theoretical model to school return after the first birth. In statistical terms the problems become:

1. Which independent variables provide the best least-squares prediction of school return; and
2. What are the independent and joint effects of each of the independent variables on the criterion variable, school return?

These questions were addressed by employing the multiple regression analysis subprogram of SPSS. [1]

To set up the data for regression analysis, all of the study variables were coded as if they were continuous. In the case of dichotomous, nominal variables, dummy variables were created by coding the one alternative as a vector of 1's, and the other as a vector of 0's. Nominal variables with three or more possible values were coded the same way, wich each value treated as a separate variable. For example, the trichotomous variable "religion" could be said to have the possible values Protestant, Catholic and Jew. For the first dummy variable, Protestant = 1, and Catholic or Jew = 0; for the second. Catholic = 1 and Protestant or Jew = 0; and so forth for K-1 sets of vectors.

Ordinal variables (eg. socio-economic status) were coded consecutively from 1 (minimum value) to i (maximum value). Ratio-level variables (eg. age) were coded for exact values.

[1] The reference sources for the application of regression analysis described in this section are Kerlinger (1973), Tatsuoka (1976), Nie (1975), Darlington (1978), and Hummel and Sligo (1971)

Using the dummy variable coding scheme, the dependent variable, school return (y) was defined as any return to high school or equivalency study regardless of whether the program was completed.[2]

The first step of data analysis was to observe the frequency and percentage distributions of the dependent variable (y) and each of the independent variables ($x_1 \ldots x_i$). The means and standard deviations of interval-level variables were computed, and each of the independent variables was cross-tabulated with the dependent variable.

Secondly, the correlations between all pairs of variables were computed, and their associated statistical probabilities. The variables with statistically significant zero order correlations with school return at the $p < .01$ level were selected for the final regression equation. When this procedure yielded two or more alternative measures of the same construct two criteria were employed for selection of one variable for inclusion in the final regression equation. First, variables with the fewest missing values were selected in order to maximize sample size. For further elimination of redundant or highly correlated measures, the best predictor of the group was selected for use in the regression equation. This was done by combining inter-correlated subgroups of variables and conducting separate regressions of school return on each. Within

[2]Other definitions of the dependent variable are presented in tables for descriptive purposes, but were not used for regression analysis. These include the numbers and percentages of women who graduated from high school programs.

each sub-group, that variable with the largest standardized partial regression coefficient (beta) with school return was selected for inclusion in the final regression equation.

Variables were entered into the regression equation in hierarchical order consistent with the theoretical framework being tested. The resulting equation thus addressed the first statistical question of interest by identifying those independent variables which provided the best least squares prediction of school return:

$$Y' = a + b_1x_1 + \ldots + b_ix_i$$

where: Y' = the estimated regression line;

a = the intercept constant; and

b = the regression coefficient.

The proportion of variance explained by the final combination of independent variables was computed as the coefficient of determination R^2_{xy}: the ratio of explained variation in school return (y) to the total variation in y.

$$R^2_{xy} = \frac{SS_{reg}}{SS_y}$$

where $SS_{reg} = \Sigma(Y'-\bar{Y})^2$; and

$SS_y = \Sigma(Y-\bar{Y})^2$.

The statistical significance of this R^2 value was computed by F tests:

$$F = \frac{R^2/K}{(1-R^2) \; / \; (N-K-1)}$$

where:

R^2 = the squared correlation between a linear combination of $x_1 \ldots x_i$ abd tl

K = the number of independent variables; and

N = the total sample size.

A significant F ratio ($p<.05$) was interpreted to mean that the R^2 value was statistically significant; ie. that it expressed the significance of the relationship between a linear combination of the independent variables and school return.

Standardized partial beta values (B) for each independent variable were calculated by computer on standardized x and y scores using the equation:

$$B_j = R_{ij}^{-1} R_{yj}$$

where: R_{ij}^{-1} = the inverse of the matrix of intercorrelations of the independent variable; and

R_{yj} = the matrix of correlations between the independent variables and the dependent variable.

Since the resulting beta weights are unaffected by order of entry into the regression equation, they were used to compare the relative magnitude of the association between each of the independent variables and y.

The probabilities of observed F-ratios for each of the calculated beta weights were used to determine which were significantly different from zero. Specific attribution of amounts of explained variance in y to the various independent variables was based upon

the value of the squared semi-partial correlation coefficients: [1]

$$r^2_{y(1.2)} = R^2_{y.12} - R^2_{y.2}$$

where:

$R_{y.12}$ = the squared regression coefficient for y regressed on x_1 and x_2; and

$R_{y.2}$ = the squared regression coefficient for y regressed on x_2.

The significance of each variable's proportional reduction of unexplained variation in school return as represented by these square semi-partial correlations, was tested by hand calculated F-ratios using the formula: [1]

$$F = \frac{r^2_{y(1.2)}}{(1-R^2_{y.12})\ (N-K-1)}$$

The second statistical problem of distinguishing between direct and joint effects of individual independent variables in the regression equation was handled by comparing the squared semi-partial correlations for each variable when entered first into the regression equation and when entered last. A variable's direct effect was defined as the corresponding increment to R^2 when it was entered last in the equation. Its total effect was defined as the increment to R^2 when the variable was entered first. Total effect less direct effect thus yielded the proportion of explained variance attributable to the joint effect of the variable of interest in concert with other variables in the equation. F ratios were calculated for each of these effects in the manner described previously.

[1]Appropriate subscripts were substituted for each computation

One of the major questions of interest in the present study was to assess the influence of school policies on subsequent school return. In the regression analysis this was done by regressing the dependent variable on months of pregnancy spent in school. This variable applied to the entire sample, and ranged from zero months for women not in school during pregnancy, to nine months for those who left school at the time of delivery. However, other measures of school policy applied only to the subsample of 66 women who were in school when they became pregnant. Since the number of cases in this sub-sample was too few for regression analysis, differences between returners and non-returners were analyzed by means of chi square tests for nominal and ordinal-level variables, and t-tests for mean differences with interval-level variables.

In the former analysis, the dichotomous variable, school return, was cross-tabulated with school policy variables. The presence of a systematic relationship between the two variables was tested with the formula:

$$x^2 = \Sigma \frac{(f_o^i - f_e^i)^2}{f_e^i}$$

where: f_o^i = the observed frequency in each cell; and

f_e^i = the expected frequency calculated as the product of the respective row and column marginals divided by the total number of valid cases in the table.

For interval level variables the statistical significance of differences between mean values for returners and non-returners was assessed with the student's t-test, or an approximation of the

t-statistic when the distribution of independent variable values for returners and non-returners had unequal variances (S^2).

Equality of variances was first assessed by computation of an F ratio:

$$F = \frac{\text{larger } S^2}{\text{smaller } S^2}$$

When an F ratio was obtained with a probability greater than .05, equal variances were assumed, and an estimate of pooled variance calculated as:

$$S^2 = \frac{(n_1 - 1)\, S_1^2 + (n_2 - 1)\, S_2^2}{(n_1 - 1) + (n_2 - 1)}$$

The student's t was then computed for mean differences ($\bar{d}$) and evaluated as a one-tail probability at the .05 level.

When a F ratio was obtained with a probability less than or equal to .05, the variances of the independent variable distributions for returners and non-returners were considered unequal. Separate variance estimates for the two groups were thus employed in an approximation of the t statistic using the formula:

$$t = \frac{(\bar{x}_1 - \bar{x}_2)}{S_1^2 / n_1 + S_2^2 / n_2}$$

with degrees of freedom (df) calculated as follows and rounded to the nearest integer:

$$df = \frac{\left[(S_1^2 / n_1) + (S_2^2 / n_2)\right]}{\left[(S_1^2 / n_1)^2 / (n_1 - 1)\right] + \left[(S_2^2 / n_2)^2 / (n_2 - 1)\right]}$$

The resulting approximate t statistic was evaluated as a one-tailed probability at the .05 level.

Probabilities of School Return

In order to illustrate the influence of the interval-level variables used in the final regression equation, probabilities associated with school return were calculated for high and low values of these measures. These probabilities were computed with the formula:

$$P_i = \bar{y} - (B_j \, z_{ij} \, s_y)$$

where:

B_j = the standardized beta weight for the independent variable j;

z_{ij} = the standard score corresponding to a particular raw score value i of the independent variable j;

s_y = the standard deviation of the dependent variable y; and

$\bar{y}$ = the mean value of the dependent variable.

Study Limitations

The selection of a sample of hospital ward patients limits the generalizability of the findings to similar groups in New York City, or at best, in large metropolitan areas, and to the two minority groups in the sample (Blacks and Hispanics). However, this limitation is warranted for several reasons:

1. It is precisely among inner-city, low-income women where the proportion of adolescent births is highest;
2. Barriers to continued education might also be expected to be greatest among this population. This, the identification of factors facilitating school continuation among this "high risk" group would be particularly significant.
3. Since no similar research has been conducted to identify the "opportunity factors" associated with school continuation among pregnant students, the study is exploratory in nature. Identification and

operationalization of pertinent opportunity variables such as availability of childcare, knowledge of educational programs, and perceived or actual barriers to continued schooling would be an important contribution to the literature. The distribution of these variables in the population to be studied will provide guidelines for future research in samples more representative of the general U.S. population.

4. Resource and logistical limitations preclude the selection of a random sample of non-high school graduates who recently experienced a birth in private, semi-private and public facilities.

The decision to limit the study to women who had delivered their first child, rather than to higher parity women was based upon the sociological role transition theory. Presser (1976) notes that it is the first birth which most severely alters women's "role options and reduces the 'opportunity costs' of having additional children." (p.23) Similarly, Bacon (1974) discusses motherhood as a critical life event in which new roles are assumed and old ones abandoned. By this definition, the timing of the first birth is clearly more significant than subsequent fertility.

It is also possible that women who were located and interviewed differed significantly from women who were not interviewed on the variables under consideration. If so, this would further reduce the generalizability of our findings.

In order to test the validity of study findings, we compared selected background characteristics of interviewed and non-interviewed women using information gathered for all potential respondents at the time of delivery. The results of this comparison are presented in Table 2. Chi Square tests for differences showed that interviewed women did not differ significantly from the women who were lost to follow-up on any of the above variables at the $p = .05$ level.

Table 2

COMPARISON OF INTERVIEWED AND NON-INTERVIEWED WOMEN BY SELECTED VARIABLES [1]

Variables	Interviewed # (%)	Non-Interviewed # (%)	X^2
Ethnicity			
Black	38 (33.3)	44 (41.1)	
Hispanic	76 (66.7)	63 (58.9)	N.S.
Total	114 (100.0)	107 (100.0)	
Marital Status			
Single	65 (58.6)	70 (67.3)	
Ever-Married	46 (41.4)	34 (32.7)	N.S.
Total	104 (100.0)	104 (100.0)	
Public Assistance Status			
No Public Assistance	27 (24.5)	23 (21.7)	
Welfare or Medicaid	83 (75.5)	83 (78.3)	N.S.
Total	110 (100.0)	106 (100.0)	
Age in 1975			
Under age 20	61 (54.0)	66 (61.7)	
Age 20 or older	52 (46.0)	40 (37.4)	N.S.
Total	113 (100.0)	106 (100.0)	

[1] The data for this table were obtained from family planning counseling forms at the time of delivery. Respondents for whom forms were not available are not included, with the result that the N's for both interviewed and non-interviewed women are reduced.

Table 2 (Continued)

COMPARISON OF INTERVIEWED AND NON-INTERVIEWED WOMEN BY SELECTED VARIABLES

Variables	Interviewed		Non-Interviewed		X^2
	#	(%)	#	(%)	
Years of Schooling at Time of Delivery					
Less than 9	43	(37.8)	35	(32.7)	
10	33	(28.9)	28	(26.2)	N.S.
11	38	(33.3)	44	(41.1)	
Total	114	(100.0)	107	(100.0)	

Follow-up time from date of delivery to date of interview in our study varied from 32 to 47 months. Thus, some women have had a longer period in which they could return to school than others. In order to test for this source of bias, we compared the mean follow-up intervals of returners and non-returners. Length of follow-up for the two groups was almost identical. The mean months of follow-up for returners and non-returners respectively were 38.6 and 38.3 months. This difference is not statistically significant at any accepted level. We concluded that women who were going to return to high school did so within two and a half years of the first birth, and that woman followed longer than this interval were not afforded an advantage.

The study questionnaire included some retrospective questions to measure variables in the respondents' pasts. Basically four points in time were of interest: when the respondent was growing up, at the time of her pregnancy, at the time of the first birth, and at the time of the interview.

Although retrospective questions are subject to recall error, this was probably minimized by the young age of most of the women in the sample (mean age = 21). In other words, questions regarding the period when they "were growing up" will refer to a not very distant past for most of these women. In addition, an attempt was made to limit retrospective questions to behavioral variables rather than reports of former attitudes or influences.

The psychological variables (locus of control and sex role attitudes) hypothesized to influence continued schooling were measured at the time of interview. This presents a classical psychological research problem of interpretation of causal direction, since traits will be

measured after the measure of the dependent variable, school continuation status. It is conceivable that continued schooling after childbirth causes changes in psychological dispositions rather than the other way around.

Davis and Bumpass (1976) faced this problem in interpretation of the finding that women who returned to school after marriage were more modern in their sex role attitudes than women who did not return. They argued that: "it seems unlikely that postnuptial education would lead to a complete turn-about of a woman's sex role attitudes," (p.172) although they did not discard this possibility.

Further support of the inference of former psychological characteristics from current measures comes from the work of Davids and Holden (1970). They gave a battery of psychological tests to 42 women in their third trimester of pregnancy, and again eight months after childbearing, and found that the pre- and post-scores were highly correlated. (Product-moment correlation of the combined test scores was .72).

One further methodological limitation to be discussed was the selection of multiple regression analysis with a dichotomous dependent variable. Although several authors have criticized this application, Goodman (1976) presents a forceful argument that the many alternative techniques which have been suggested have equal or greater limitations. He argues that least squares estimation with a dependent variable is a reasonable technique given a large sample (greater than 100 cases.) Kerlinger and Pedhazur (1973) also argue that multiple regression is an appropriate technique for analysis with a dichotomous dependent variable.

Chapter IV

RESULTS

Frequency of School Return

Within four years of the birth of their first child fifty-four women, or one-third of the sample, resumed their high school educations. (See Table 3). Approximately half of these women were preparing for the General Education Development (GED) or high school equivalency examination. The remainder returned to regular high school classes. Of the returners, 14 (26%) had graduated from high school within four years of the first birth, and five of these women went on to college. An additional 19 respondents (35%) were still studying for their high school diplomas at the time of interview. (See Table 4)

General Characteristics of School Returners

Tables 5 and 6 present the general characteristics of the 54 high school returners, and the results of bivariate comparisons with the women who did not return. From these comparisons initial characteristics of the school returner can be discerned.

Black women were significantly more likely than Latin women to return to high school study, and Latin women born outside of the continental United States were least likely of all to have returned. Similarly, only 18% of women who had received foreign schooling returned after the first birth, as compared to 46% of women who attended only U.S. schools.

TABLE 3

KINDS OF EDUCATIONAL PROGRAMS TO WHICH WOMEN RETURNED WITHIN FOUR YEARS OF THE BIRTH OF THEIR FIRST CHILD

Kind of Program	No.	(%)
High School and College	5	(3.1)
High School/GED Only	49	(30.6)
Did Not Return to High School	106	(66.3)
Total	160	(100.0)

TABLE 4

EDUCATIONAL STATUS OF THE 54 HIGHSCHOOL RETURNERS BY DATE OF INTERVIEW

Educational Status	No.	(%)
Had graduated from high school	14	(25.9)
Still studying	19	(35.1)
Had dropped out before graduation	21	(39.0)
Total	54	(100.0)

Table 5

COMPARISON OF RETURNERS AND NON-RETURNERS ON SELECTED VARIABLES WITH t-TEST RESULTS FOR DIFFERENCES IN MEAN VALUES

Variable	Returners N	Returners $\bar{x}$	Non-Returners N	Non-Returners $\bar{x}$	Comparison t score
Demographic Characteristics					
Father's years of education	30	8.4	52	7.6	0.86
Mother's years of education	41	9.7	86	7.6	3.30***
Father's occupational prestige	39	32.8	78	34.8	-0.90
Number of siblings	54	4.3	106	5.2	-1.57
R's birth order	54	3.0	99	3.5	-1.33
Educational Background Factors					
Total years of foreign schooling	54	1.1	106	4.0	-4.60***
R's pre-pregnancy years of education	54	9.6	106	9.2	1.30
Child's father's years of education pre-pregnancy	47	11.2	90	10.2	2.16*
Occupational aspiration prestige score	52	47.9	92	39.6	3.62***
Significant Other Influence score	54	4.0	102	4.7	-2.27*

Table 5 (cont.)

COMPARISON OF RETURNERS AND NON-RETURNERS ON SELECTED VARIABLES WITH t-TEST RESULTS FOR DIFFERENCES IN MEAN VALUES

Variables	Returners N	Returners $\bar{x}$	Non-Returners N	Non-Returners $\bar{x}$	Comparison t score
Reproductive History					
Age at first birth	54	18.3	106	22.1	5.29***
R's previous pregnancies	54	0.2	106	0.3	1.64
Opportunity Factors					
Total months of pregnancy spent in school	53	4.6	105	1.4	6.63***
Interval between First Birth and interview	54	38.6	106	38.3	0.56
Psychological Variables					
Sex Role Attitudes	53	32.2	103	37.3	-5.64***
Internal/External Locus of Control	52	2.1	99	2.0	0.12

* $p < .05$
** $p < .01$
*** $p < .001$

Table 6

PERCENTAGES OF WOMEN WITH SELECTED CHARACTERISTICS WHO RETURNED TO HIGH SCHOOL AFTER THE FIRST BIRTH AND X^2 RESULTS FOR COMPARISON WITH NON-RETURNERS

Characteristic	Total Sample Effective N	Percent Returners	Percent Non-returners	X^2
Demographic Characteristics				
Ethnicity				
Black	64	54.7	45.3	19.38***
Latin	96	19.8	80.2	
Place of birth				
U.S. born	86	52.3	47.7	26.93***
Foreign born	74	12.2	87.8	
Mother Employed During R's Childhood				
Employed	88	29.5	70.5	1.05
Not employed	70	38.6	61.4	
Family of Origin Received Welfare				
Welfare	62	46.8	53.2	6.76**
No Welfare	98	25.5	74.5	
Educational Background Factors				
Foreign Schooling				

Table 6 (cont.)

PERCENTAGES OF WOMEN WITH SELECTED CHARACTERITICS WHO RETURNED TO HIGH SCHOOL AFTER THE FIRST BIRTH AND X^2 RESULTS FOR COMPARISON WITH NON-RETURNERS

Characteristic	Total Sample Effective N	Percent Returners	Percent Non-returners	X^2
Yes	68	17.6	82.4	12.86***
No	91	46.2	53.8	
School Marks				
Excellent or Good	68	39.7	60.3	0.00
Average or Poor	69	37.7	62.3	
Ever Failed a Course				
Yes	82	41.5	58.5	1.01
No	57	31.6	68.4	
Attitude Toward School				
Liked School	104	36.5	63.5	0.12
Didn't Like School	36	41.7	58.3	
R Attended Vocational or Adult Ed. Classes Before Pregnancy				
Any	36	8.3	91.7	12.19***
None	123	41.5	58.5	
R Was in School at Pregnancy				

Table 6 (cont.)

PERCENTAGES OF WOMEN WITH SELECTED CHARACTERISTICS WHO RETURNED TO HIGH SCHOOL AFTER THE FIRST BIRTH AND X^2 RESULTS FOR COMPARISON WITH NON-RETURNERS

Characteristic	Total Sample Effective N	Percent Returners	Percent Non-returners	X^2
In school	77	55.8	44.2	30.53***
Not in School	83	13.3	86.7	
Reproductive History				
R's Marital Status				
Ever Married	75	17.3	82.7	16.13
Never Married	84	48.8	51.2	
Attitude Toward timing of Child's birth				
Wishes earlier or "alright"	104	28.8	71.2	2.17
Wishes child had been born later	55	41.8	58.2	
Opportunity Factors				
Husband in household at pregnancy				
Yes	52	11.5	88.5	15.56***
No	108	44.4	55.6	
Mother in household at pregnancy				
Yes	73	54.8	45.2	24.89***
No	87	16.1	83.9	

Table 6 (Cont.)

PERCENTAGES OF WOMEN WITH SELECTED CHARACTERISTICS WHO RETURNED TO HIGH SCHOOL AFTER THE FIRST BIRTH AND X^2 RESULTS FOR COMPARISON WITH NON-RETURNERS

Characteristic	Total Sample Effective N	Percent Returners	Percent Non-returners	X^2
R's employment status at pregnancy				
Working	66	21.2	78.8	6.97**
Unemployed	94	42.6	57.4	
Mother in household now				
Yes	40	57.5	42.5	12.08***
No	120	25.8	74.2	
Child's father in household now				
Yes	53	11.3	88.8	16.36***
No	107	44.9	55.1	
Knowledge of GED				
R has heard of GED	122	41.8	58.2	13.42***
R has never heard of GED	38	7.9	92.1	

* $p < .05$
** $p < .01$
*** $p < .001$

Surprisingly, women from families who had received welfare were more likely to return than women whose families had not received public assistance. The reason for this apparant anomaly became clear in subsequent analysis. Since many more Black than Latin women had received welfare, the influence of ethnicity suppressed the true negative association between receipt of welfare and school return. (See regression analysis).

Two educational variables significantly distinguished between returners and non-returners. Women who had received vocational training prior to the first birth were far less likely to later return to high school. Conversely, 56% of the women who were still in high school when they got pregnant subsequently continued high school studies as compared to only 13% of the women who left high school before they became pregnant. Returners also spent more months of their pregnancies in school (4.6 and 1.4 months respectively).

Almost half of the respondents who had never been married returned to school versus less than one fifth of the married women. Living situation at pregnancy discriminated equally well between returners and non-returners, with women living with their husbands least likely to return. After observation of these differences in marital status and living situation, it is unsurprising to find that on the average, the school returners were four years younger than the non-returners.

Finally, the mean sex role attitude score of women who returned to high school was significantly more modern (32.2) than the mean score of the non-returners (37.3).

Regression Analysis

The matrix of zero-order correlations among all study variables was used to select variables for inclusion in the multiple regression equation. (See Appendix C) Those variables were selected which had zero order correlations with school return significant at the $p < .01$ level. This yielded the following fifteen variables:

1. Mother's years of education
2. Receipt of welfare during childhood
3. Ethnicity
4. Language
5. Place of birth
6. Sex role attitudes
7. Vocational education
8. Pre-pregnancy educational aspirations
9. Whether in school at pregnancy
10. Age at first birth
11. Heard of GED
12. Husband/boyfriend in household at pregnancy
13. Months of pregnancy spent in school
14. Mother in household now
15. Husband/boyfriend in household now

Within this list several variables are redundant measures of the same construct. Variables 1-2 are measures of socioeconomic status of the family of origin; variables 3-5 are alternative measures of ethnicity and aculturation; and variables 12, 14 and 15 are indices of living situation.

Of the socioeconomic status variables, receipt of welfare was selected over mother's years of education since the latter had far more missing values. To select measures of ethnicity and living situation, separate subgroup regressions were performed (See Tables 7 and 8). Based on the magnitude of the standardized partial regression coefficients (betas), "Place of Birth" and "Living with Husband or Boyfriend at Pregnancy" were selected respectively for the final regression analysis. In both cases the increment to explained variance in school return above and beyond that due to the selected variable was negligible.

One further variable was eliminated from the initial list before proceeding with the general regression analysis. "Heard of GED" is a variable based upon a question asking whether respondents had ever heard of high school equivalency examinations. It was designed to assess knowledge of opportunities to return, and, unsurprisingly, far more returners than non-returners knew of the GED. However, it is not clear whether awareness of the program was gained prior to, or after a woman's own school return. Because of its ambiguous causal direction, the variable was excluded from the regression analysis.

The selection process described above yielded eight variables for the final regression equation. Figure 3 shows the variables and their presumed causal order in the determination of school return. This same ranking was used for hierarchical order of entry into the regression equation.

The results of the final regression are shown in Table 9. Judging by relative magnitude of the standardized beta weights, sex role

Table 7

SUBGROUP REGRESSION: STANDARDIZED PARTIAL REGRESSION COEFFICIENTS AND SQUARED SEMI-PARTIAL CORRELATIONS RELATING SCHOOL RETURN TO SEVERAL MEASURES OF ETHNICITY

Independent Variable	Beta	F ratio	r^2 change	F ratio
Place of Birth (U.S.)	.379	7.55**	.185	35.50***
Ethnicity (Black)	.100	0.88	.004	0.85
Language (Spanish)	.028	0.05	.000	0.05

Constant	-.086
Total R^2	.189
Adjusted R^2	.174
F	12.133***
N	160

* $p < .05$
** $p < .01$
*** $p < .001$

Table 8

SUBGROUP REGRESSION: STANDARDIZED PARTIAL REGRESSION COEFFICIENTS AND SQUARED SEMI-PARTIAL CORRELATIONS RELATING SCHOOL RETURN TO SEVERAL MEASURES OF LIVING SITUATION

Independent Variable	Beta	F ratio	r^2 change	F ratio
Living with husband or boyfriend at pregnancy	-.190	2.51	.164	33.13***
Living with mother now	.150	4.02*	.041	8.24**
Living with mother at pregnancy	.174	3.65	.019	3.85
Living alone at pregnancy	.104	1.99	.007	1.44
Living with husband or boyfriend at delivery	-.127	1.45	.007	1.45

Constant	.111
Total R^2	.238
Adjusted R^2	.213
F	9.623 ***
N	160

* $p < .05$
** $p < .01$
*** $p < .001$

FIGURE 3

HYPOTHESIZED CAUSAL ORDER OF THE EIGHT INDEPENDENT VARIABLES SELECTED FOR REGRESSION WITH SCHOOL RETURN

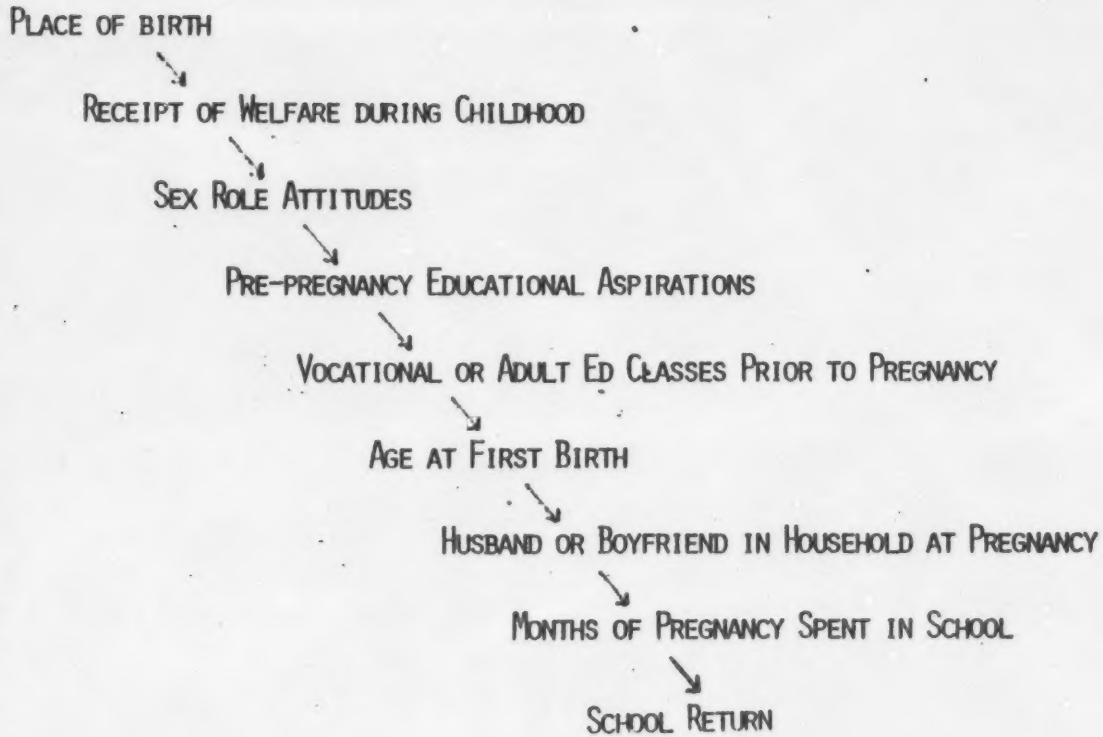

PLACE OF BIRTH
RECEIPT OF WELFARE DURING CHILDHOOD
SEX ROLE ATTITUDES
PRE-PREGNANCY EDUCATIONAL ASPIRATIONS
VOCATIONAL OR ADULT ED CLASSES PRIOR TO PREGNANCY
AGE AT FIRST BIRTH
HUSBAND OR BOYFRIEND IN HOUSEHOLD AT PREGNANCY
MONTHS OF PREGNANCY SPENT IN SCHOOL
SCHOOL RETURN

Table 9

STANDARIZED PARTIAL REGRESSION COEFFICIENTS AND SQUARED SEMI-PARTIAL CORRELATIONS RELATING SCHOOL RETURN TO INDEPENDENT VARIABLES SELECTED FOR THE FINAL MODEL

Independent Variables	Beta	F ratio	r^2 Change	F ratio
Demographic Characteristics				
Born in U.S.	.060	0.49	.179	45.91***
Family of Origin Received Welfare	-.135	3.03	.000	0.08
Psychological Variables				
Traditional sex role-attitudes	-.228	10.92***	.061	15.68***
Educational Background Factors				
Pre-pregnancy educational aspirations	.207	8.17**	.046	11.73***
Vocational training	-.197	8.59**	.065	16.76***
Reproductive History				
Age at first birth	-.144	3.27	.031	7.97**
Opportunity Factors				
Husband or boyfriend in Household at pregnancy	-.235	10.15**	.051	13.07***
Months of pregnancy in school	.151	3.78	.015	3.78

Constant = -.003
Total R^2 = .449 F = 14.37***
Adjusted R^2 = .418 N = 150

* $p < .05$
** $p < .01$
*** $p < .001$

attitudes is the best predictor of subsequent school return, followed by living situation at pregnancy, vocational training and educational aspirations.

Observation of the squared semi-partial correlation coefficients (r^2 change) confirms the statistical significance of the four variables mentioned above, and adds two others to the list of variables which add significantly to the proportion of total explained variance. These are place of birth and age at first birth.

In order to distinguish the direct effects of these variables on school return, we partitioned the proportions of explained variance into direct, joint and total effects (Table 10). From this analysis it can be seen that only the four variables with statistically significant betas had significant direct effects upon school return. The effects of the remaining variables in the model are due to joint effects, or shared variance with the other predictors of school return.

Separate Analysis by Place of Birth and School Status

Only twelve percent of the foreign-born women and thirteen percent of the out-of-school respondents returned to high school after their children were born. In Table 11 we see that an even smaller percentage (5%) of women with both these characteristics returned. Because of the cut-off effect of these variables, separate analysis were conducted to test for possible interaction between place of birth and school status.

First, an interaction variable was created by multiplying the place of birth codes times the number of months of pregnancy spent in

TABLE 10

PARTITIONING OF THE PROPORTION OF EXPLAINED VARIANCE CORRESPONDING TO EACH INDEPENDENT VARIABLE IN THE FINAL REGRESSION EQUATION INTO DIRECT, JOINT AND TOTAL EFFECTS ON SCHOOL RETURN

Independent Variables	Direct Effect[1]	F ratio	Joint Effect[2]	F ratio	Total Effect[3]	F ratio
Born in U.S.	.002	0.51	.177	45.29***	.179	45.80***
Family of Origin Received Welfare	.012	3.07	.036	9.21**	.048	12.28***
Traditional sex role attitudes	.043	11.00***	.109	27.89***	.152	38.89***
Pre-pregnancy educational aspirations	.032	8.19**	.126	32.24***	.158	40.43***
Vocational training	.034	8.70**	.052	13.31***	.086	22.01***
Age at first birth	.013	3.33	.138	35.31***	.151	38.64***
Husband or boyfriend in household at pregnancy	.040	10.24**	.140	35.83***	.180	46.07***
Months of pregnancy in school	.015	3.84	.194	49.64***	.209	53.48***

[1] Increment to R^2 when variable entered last

[2] Total effect less direct effect

[3] Increment to R^2 when variable entered first

* $p < .05$
** $p < .01$
*** $p < .001$

Table 11

CROSS-TABULATION OF SCHOOL-STATUS AT PREGNANCY BY SUBSEQUENT SCHOOL RETURN, CONTROLLING FOR PLACE OF BIRTH

Variable	Total Sample Effective N	Percent Returners	Percent non-Returners	x^2
U.S. Born				
In school at pregnancy	50	68.0	32.0	10.31 **
Not in school	36	30.6	69.4	
Total	86			
Non-U.S. Born				
In school at pregnancy	16	37.5	62.5	9.43 **
Not in school	58	5.2	94.8	
Total	74			

* $p < .05$

** $p < .01$

*** $p < .001$

school.[1] This variable was then added to the multiple regression equation described earlier. The results of the regression with the interaction variable are shown in Table 12. From the negligible squared semi-partial correlation coefficient (r^2 change) we may conclude that there was no significant interaction between place of birth and school status during pregnancy.

In order to observe differences in the factors predicting school return for women born within and outside of the continental United States, separate regression equations were computed for the two groups (Tables 13 and 14). These tables provide several indications that the theoretical model being tested works much better for women born in the U.S. than for women born elsewhere. The overall equations explain 36% of the variance in school return among U.S. born women, but only 23% of the variance for foreign-born women.. From the squared semi-partial correlation coefficients (r^2 change), we see that only sex role attitudes and vocational training add significantly to the prediction of school return among foreign-born women. For U.S.-born women these two variables plus the measures of aspirations and living situation at pregnancy add significantly to the proportion of total explained variance in school return.

[1]Months of pregnancy spent in school was selected rather than whether or not a respondent was in school since the former was used in the general regression equation. Women who were not in school were coded as having attended for zero months; thus months in school is a more refined measure of school status during pregnancy.

TABLE 12

RESULTS OF REGRESSION ANALYSIS INCLUDING INTERACTION TERM FOR U.S. BORN AND MONTHS OF PREGNANCY SPENT IN SCHOOL

Independent Variable	Beta	F ratio	r^2 change	F ratio
Born in U.S.	.040	0.13	.179	45.62***
Family of Origin Received Welfare	-.135	3.03	.000	0.08
Traditional Sex Role Attitudes	-.231	10.87***	.061	15.58***
Pre-pregnancy Educational Aspirations	.209	8.22**	.046	11.66***
Vocational Training	-.195	8.21**	.065	16.65***
Age at First Birth	.147	3.35	.031	7.92**
Husband or Boyfriend in Household at Pregnancy	-.235	10.12**	.051	12.99***
Months of Pregnancy in School	.104	0.38	.015	3.76
Interaction variable: Born in U.S. with Months of Pregnancy in School	.057	0.10	.000	0.10

Constant	-.006
Total R^2	.450
Adjusted R^2	.414
F	12.706***
N	150

* p < .05
** p < .01
*** p < .001

TABLE 13

SEPARATE REGRESSION FOR WOMEN BORN IN THE CONTINENTAL UNITED STATES: STANDARIZED PARTIAL REGRESSION COEFFICIENTS AND SQUARED SEMI-PARTIAL CORRELATIONS RELATING SCHOOL RETURN TO SELECTED INDEPENDENT VARIABLES.

Independent Variables	Beta	F ratio	r^2 change	F ratio
Family of Origin Received Welfare	-.175	3.40	.000	0.01
Traditional Sex Role Attitudes	-.236	6.95*	.095	12.59***
Pre-pregnancy Educational Aspirations	.329	12.35***	.128	16.93***
Vocational Training	-.098	1.03	.048	6.42*
Age at First Birth	.280	6.26*	.075	9.93**
Husband or Boyfriend in Household at Pregnancy	-.251	7.62**	.064	8.44**
Months of Pregnancy Spent in School	.038	0.12	.001	0.12

Constant	- 1.664
Total R^2	.411
Adjusted R^2	.358
F	7.778
N	86

* $p < .05$
** $p < .01$
*** $p < .001$

TABLE 14

SEPARATE REGRESSION FOR WOMEN BORN OUTSIDE OF THE CONTINENTAL UNITED STATES: STANDARDIZED PARTIAL REGRESSION COEFFICIENTS AND SQUARED SEMI-PARTIAL CORRELATIONS RELATING SCHOOL RETURN TO SELECTED INDEPENDENT VARIABLES

Independent Variable	Beta	F ratio	r^2 change	F ratio
Family of Origin Received Welfare	-.079	0.41	.009	0.74
Traditional Sex Role Attitudes	-.224	3.61	.062	5.03*
Pre-pregnancy Educational Aspirations	.141	1.35	.024	1.93
Vocational Training	-.285	5.74*	.095	7.75**
Age at First Birth	.134	1.12	.038	3.08
Husband or boyfriend in Household at Pregnancy	-.182	2.55	.046	3.76
Months of Pregnancy Spent in School	.235	3.49	.043	3.49

Constant .155
Total R^2 .315
Adjusted R^2 .230
F 3.681
N 64

* $p < .05$
** $p < .01$
*** $p < .001$

Probabilities of School Return

The probabilities of school return associated with specific values of sex role attitudes, months of pregnancy spent in school and age at first birth appear in Table 15. These comparisons highlight the independent effects of the three variables on resumption of schooling. The most dramatic of these is the probability of school return for women with the lowest and highest sex role scores.

Separate Analysis of School Effects on Respondents Who Were In High School When they Became Pregnant

Tables 16 and 17 give descriptive detail regarding the school policies and school status during pregnancy. The majority of women (61%) were allowed to remain in their high schools during pregnancy, but by the time of delivery most had dropped out (70%). Seven women (11%) succeeded in graduating from high school while they were pregnant.

The effects of school characteristics and policies toward pregnant students could not be adequately addressed with multivariate analysis since only 66 of the respondents were in high school at the time they became pregnant. In order to identify possible associations between these variables and school return, separate cross-tabulations and chi square tests were conducted. Table 18 reports the results of this analysis. None of the variables examined significantly differentiated between subsequent school returners and non-returners.

Self-Reported Reasons for Not Returning to School

It could be argued that the best explanation of why some women do not return to school after having a child would be self-reported reasons

Table 15

PROBABILITIES OF SCHOOL RETURN ASSOCIATED WITH SPECIFIC RAW SCORE VALUES OF SELECTED INTERVAL-LEVEL INDEPENDENT VARIABLES

Variable	Associated Probability of School Return
Sex Role Attitudes	
Most modern score (22)	.899
10th percentile score (29)	.777
90th percentile score (44)	.517
Most traditional score (54)	.343
Months of Pregnancy Spent in School	
10th percentile value (0)	.607
90th percentile value (8)	.776
Maximum value (9)	.797
Age at First Birth	
Youngest age (13)	.761
10th percentile age (17)	.718
90th percentile age (20)	.674
Oldest age (37)	.430

Table 16

REPORTED SCHOOL POLICY FROM WOMEN WHO WERE IN HIGH SCHOOL AT THE TIME THEY BECAME PREGNANT

School Policy	No.	(%)
Student asked to leave	3	(4.5)
Student asked to transfer	10	(15.2)
Student allowed to stay	40	(60.6)
Other	2	(3.0)
Don't know school policy	11	(16.7)
Total	66	(100.0)

Table 17

EDUCATIONAL STATUS AT END OF PREGNANCY FOR RESPONDENTS WHO WERE IN HIGH SCHOOL WHEN THEY BECAME PREGNANT

Educational Status	No.	Percentage
Had dropped out	46	(69.7)
Graduated	7	(10.6)
Still in school	11	(16.7)
No response	2	(3.0)
Total	66	(100.0)

Table 18

SEPARATE ANALYSIS OF 66 RESPONDENTS WHO WERE IN HIGH SCHOOL WHEN THEY BECAME PREGNANT: PERCENTAGES OF WOMEN WITH SELECTED CHARACTERISTICS WHO RETURNED TO SCHOOL AFTER THE FIRST BIRTH AND X^2 RESULTS FOR COMPARISON WITH NON-RETURNERS

Characteristic	Total Sample Effective N	Percent Returners	Percent Non-Returners	X^2
School Pregnancy Policy				
Students asked to leave or transfer	13	61.5	38.5	
Student allowed to stay	40	57.5	42.5	0.00
Did the School Do Anything Special				
Yes	19	57.9	42.1	
No	30	60.0	40.0	0.02
Did R Have Any Difficulties Attending Classes There?				
Yes	11	63.6	36.4	
No	44	56.8	43.1	0.00
R Attended Maternity School While Pregnant				
Yes	10	80.0	20.0	
No	56	57.1	42.9	1.02
R's Number of Months spent in School				
One to three months	16	37.5	62.5	
Four to six months	19	63.2	36.8	

Table 18 (cont.)

SEPARATE ANALYSIS OF 66 RESPONDENTS WHO WERE IN HIGH SCHOOL WHEN THEY BECAME PREGNANT: PERCENTAGES OF WOMEN WITH SELECTED CHARACTERISTICS WHO RETURNED TO SCHOOL AFTER THE FIRST BIRTH AND X^2 RESULTS FOR COMPARISON WITH NON-RETURNERS

Characteristic	Total Sample Effective N	Percent Returners	Percent Non-Returners	X^2
Seven to nine months	27	74.1	25.9	5.70
R Finished Grade While Pregnant				
Yes	37	64.9	35.1	
No	24	50.0	50.0	0.79
R's Attitude Toward Leaving High School While Pregnant				
Happy to leave	29	65.5	34.5	
Ambivalent/Didn't Care	12	25.0	75.0	
Unhappy to leave	18	44.4	55.6	6.00

[1] None of the x^2 values were significant at the p. 05 level

from the respondents themselves. Two questions were included in the interview to obtain this information. First, women who did not return to school were asked why they had not. From Table 19 it can be seen that childcare problems and a desire to stay home with the baby were the most frequently cited reasons for not having returned to school.

Secondly, all women were asked to rate the importance of general items on a list of reasons "why some women find it difficult to continue their educations after they have a baby." This was asked of all respondents in order to compare the responses of returners and non-returners. It was obviously hypothetical for women who had returned to school. Table 20 shows the percent of returners and non-returners who rated each of the items a "very important reason". From this table it can be seen that the two groups generally agreed on the importance of the various items. The largest percentage of respondents in both categories considered child care problems, and their associated costs "very important reasons."

The largest differences between the importance attributed to responses by returners and non-returners occurred for the items concerning family opposition and embarrassment over returning to school behind their peers. In each case women who had not returned themselves were more likely to attribute importance to these items.

A comparison of Tables 19 and 20 shows that all respondents perceive child care issues as the foremost reason for not returning to school. However, from Table 19 we see that for 29% of the non-returners this takes the form of a personal preference to stay home with their infant. Slightly fewer (28%) mentioned the need to stay

TABLE 19

SELF-REPORTED MAIN REASON FOR NOT RETURNING TO SCHOOL AFTER FIRST BIRTH

Main Reason	N	(%)
Preferred to stay home with the baby	26	(28.9)
Childcare problems	25	(27.8)
Preferred to work	8	(8.9)
Financial problems	6	(6.7)
Didn't like school/went as far as wanted	6	(6.7)
Illness/family opposition	3	(3.3)
"Not enough time"	3	(3.3)
Other reasons	10	(11.1)
No response	3	(3.3)
Total	90	(100.0)

Table 20

ATTRIBUTED IMPORTANCE OF GENERAL REASONS "WHY SOME WOMEN DO NOT CONTINUE THEIR EDUCATIONS AFTER THEY HAVE A BABY" BY WHETHER THE RESPONDENTS THEMSELVES RETURNED

List of Reasons	Percent of Respondents Who Indicated That This Was A "Very Important Reason"			
	Returners	Non-Returners	Total Sample	X^2
They don't have anyone to take care of their children	78.5	72.6	70.0	0.38
They can't afford to pay for someone to take care of their children	73.8	62.8	63.8	0.52
They don't have money to pay for school costs.	60.0	54.8	53.1	0.07
They don't like studying or going to school	47.0%	41.2%	41.3	0.57
They don't have time to study	42.4	43.0	40.6	0.04
They don't know about opportunities to go back to school	39.4	47.6	40.6	0.00
They don't think going to school will be of any use to them.	34.4	44.2	37.5	0.37
They would have to quit their jobs to go to school	36.5	37.6	34.4	0.11

Table 20 (cont.)

ATTRIBUTED IMPORTANCE OF GENERAL REASONS "WHY SOME WOMEN DO NOT CONTINUE THEIR EDUCATIONS AFTER THEY HAVE A BABY" BY WHETHER THE RESPONDENTS THEMSELVES RETURNED

List of Reasons	Percent of Respondents Who Indicated That This Was A "Very Important Reason"			
	Returners	Non-Returners	Total Sample	X^2
They think it's not good for their children if they are studying outside of the home	25.8	32.6	28.1	0.00
They are worreid that they would lose welfare or Aid to Dependent Children (AFDC) benefits.	30.8	25.3	25.6	1.04
Their parents think they should stay home to take care of house and children	15.4	28.9	21.3	0.65
They are embarrassed to go back to school because friends have graduated or are ahead in school	15.4	28.9	21.3	2.64
Their husbands or boyfriends don't think they should study for other reasons	13.6	26.3	18.8	0.48
Their parents don't think they should study for other reasons.	23.3	28.0	18.8	3.92*

* $p < .05$
** $p < .01$
*** $p < .001$

home because of inadequate care arrangements. In addition, those factors unrelated to child care were deemed "very important" by all respondents were cited by only a few non-returners as their main reason for not continuing high school study.

Chapter V

DISCUSSION

Soundness of the Theoretical Model

The general theory being tested in this study was that demographic, educational, reproductive, opportunity and psychological variables would explain a substantial proportion of the variation in school return after a first birth. Overall, the study results appear to support the original model. In the final regression model a combination of eight variables from these categories combined to explain 42% of the variation in school return. They were: place of birth, receipt of welfare, sex role attitudes, educational aspirations, vocational training, age at first birth, household composition at the time of pregnancy and months of pregnancy spent in school

(See Figure 4). Two points about these variables are particularly noteworthy. First, although the inclusion of at least one variable from each of the five categories in the original model was not a criterion for selection of predictors for the final regression equation, in fact, at least one variable from each category remained. Secondly, of the eight predictor variables, four could be designated "female-specific": Age at first birth, Living situation at pregnancy, Months of pregnancy in school, and Sex role attitudes. None of these variables has been employed previously in general studies of status attainment.

Although the general model being tested worked well, the relative contribution of some of the variables was slightly different from that hypothesized. In the following sections specific study findings regarding the role of each category of independent variables is put into the

Figure 4

SUMMARY OF VARIABLES INCLUDED IN THE FINAL MODEL OF SCHOOL RETURN

Variables	Direction of Association with school Return	Direct or Joint Effect
Demographic Variables		
Receipt of welfare during childhood	Negative	Joint
Place of birth (U.S.)	Positive	Joint
Educational Background Factors		
Pre-pregnancy educational aspirations	Positive	Direct
Vocational training	Negative	Direct
Reproductive History		
Age at first birth	Negative	Joint
Opportunity Factors		
Husband or boyfriend in household at pregnancy	Negative	Direct
Months of pregnancy in school	Positive	Joint
Psychological Variables		
Traditional sex role attitudes	Negative	Direct

context of previous work on the determinants of educational status.

Demographic Characteristics

The study was designed to control for socio-economic status, and perhaps for this reason, few of the status variables discriminated between school returners and non-returners. Only a gross measure of receipt of welfare during childhood showed the expected association.

Black women were more likely to return than Latins, although the difference appears to be due to length of residence in the U.S. and mastery of English, rather than ethnicity per se. From the separate regressions by place of birth we see that the model is better suited to the prediction of school return among U.S.- born than foreign born women. It appears that women born outside of the United States face obstacles which inhibit the translation of aspirations and favorable living situations into school return. Their immigrant status, language problems, foreign schooling and socialization make high school study in the U.S. a difficult venture after the birth of a child.

The one variable most strongly (and negatively) related to school return for these women is vocational training. This would seem to indicate that economic pressures are the primary motivation which lead some unskilled foreign-born women to return to school. To a lesser extent modern sex role attitudes also characterize the foreign-born returners. We speculate that the Latin women with the more modern sex role attitudes perceive a greater pay-off from a high school diploma in terms of job opportunities outside the home.

Educational Background Factors

The importance of educational aspirations for the U.S.-born women

in our sample is consistent with findings from sociological status attainment research. Net of the other variables in the model, pre-pregnancy aspirations explained 13% of the variation in school return for these women.

However, for the Latin women born outside of the U.S., aspirations explained only 2% of the variance in the dependent variable. These comparative results for U.S.- born and foreign-born women parallel the findings of other researchers comparing Black and White students in the United States. Although Black students have consistently higher aspirations than White students in the same socioeconomic categories (Jencks, 1972), aspirations explain less of the variance in ultimate educational attainment of Blacks, perhaps because racial discrimination barriers for Blacks have prevented the full translation of goals into attainment. No comparable prior research has been conducted for Latin women, but we speculate that the observed differential effect of aspirations on attainment by place of birth has a similar explanation. If Black students face more barriers than White students in converting aspirations into attainment, then surely foreign-born Latin women face even greater obstacles of all, given their socioeconomic and language disadvantages.

One encouraging finding regarding the women who did not return to high school is the fact that they were more likely than the returners to have participated in vocational training and adult education classes before their pregnancy. This association remained significant in the final regression equation. It may be that career preparation affords an advantage in securing employment which reduces the perceived need for a high school diploma.

Reproductive History

The only reproductive history variable which remained in the final regression equation was age at first birth. The younger the woman at the time she gave birth, the more likely she was to return to high school. At first glance this would appear to contradict the well-substantiated positive correlation between age at first birth and eventual attainment reported by Waite and Moore (1978). However, there are important differences in our sample which explain the anomaly. First, our sample is composed entirely of non-high school graduates. Secondly, it includes not only women who have delayed childbearing until their late teens, but also women whose first birth occurred while they were in their late twenties, or even thirties. What we are observing then is not so much the impact of early first birth on school return as the effect of recency of schooling. Seen in this light it is hardly surprising that non-high school graduates who have been out of school for the longest time are the least likely to return to high school after childbirth. This interpretation is supported by the fact that older women are more likely to be employed. Since almost all of the high school returners mentioned work-related reasons for continuing in school, it is likely that the older women were not subject to equivalent pressure.

This hypothesized indirect influence of age at first birth seems to have been confirmed by the fact that all of its contribution to explained variation in school return can be attributed to joint effects with other variables in the model. In addition, there were countervailing forces operating on the variable since the older women in the study were both more likely to have received vocational training

prior to pregnancy, and less likely to have been in high school when they became pregnant. We may conclude that among non-high school graduates, younger women are more likely to continue high school studies, but that other variables associated with age at first birth are more important than age per se.

Opportunity Factors

The role of school policies and time spent studying while pregnant were of particular interest in our study because of the lack of prior research in this area. We found that the longer a women spent in school while pregnant, the more likely she was to return after delivery. Nevertheless, after controlling for age and other variables in the equation, months in school did not contribute significantly to an explanation of the variation in the dependent variable. The results of our separate analysis of women who were in school when they became pregnant lead us to speculate that the initial strength of the "months in school" variable was due to its correlation with age and aspirations, rather than the impact of school policies. Women who attended schools with lenient pregnancy policies were not significantly more likely to return later than women who were forced to leave or transfer. In fact, women in schools which allowed continuation and who reported that their schools made special arrangements for pregnant students, were actually slightly less likely to later return. Similarly, slightly more of the women citing difficulties attending classes while pregnant later returned, although none of these differences were statistically significant.

These puzzling findings are more understandable when we consider the nature of the "special arrangements" and "difficulties" reported by the students. Of the women who reported that their school made special

provisions, the vast majority cited elevator passes or separate rm classes, rather than special programs or counseling. Similarly the major y of the students who encountered difficulties attending classes while pregnant mentioned pregnancy-related discomforts rather than policy-related obstacles. It thus appears that, for the majority of pregnant students, their schools neither made significant special provisions, nor created particular difficulties. In short, for the measures included in the present study, the schools had no effect on resumption of high school after delivery.

Another variable in the opportunity category is availability of childcare. It was not included in regression analysis because in a comparison of returners and non-returners it is difficult to sort out the causal direction of this variable. Women who work or attend school must, of necessity, plan for childcare. Thus, the fact that returners were more likely to have such arrangements does not tell us whether a lack of childcare prevented school return, or whether women who did not intend to study simply never sought childcare. Nevertheless, the variable warrants attention because of its theoretical importance.

Both returners and non-returners ranked childcare problems high on the list of reasons "why some women find it difficult to continue their educations after they have a baby." This analysis would seem to confirm the assertion by several authors that lack of childcare poses a significant obstacles to the continued education of young mothers, (Furstenberg, 1976; Goldmeier, 1976; Anderson, 1974.) However, it is also clear from our study that childcare problems are not the only reasons for staying out of school, since the majority of non-returners listed other factors as their "main reason" for not returning.

One opportunity variable which could be evaluated for all respondents and seemed to directly affect school return was living situation at the time of pregnancy. The non-returners were more likely to have been living with husband or boyfriend at the time they got pregnant as opposed to living with their parents. (Few respondents had other living situations at that time). A plausible explanation of this finding is that women received more encouragement for education and financial support for schooling from their parents than from their partners. Given the importance of childcare arrangements, the free babysitting supplied by many grandparents would also facilitate school return. These interpretations are supported by Furstenberg and Crawford's work (1978), and the observation by Davis and Bumpass (1976) that single and divorced women are more likely to continue their educations than married women because they are thrown out onto their own resources.

Psychological Variables

Of all the variables in the final regression equation, sex role attitudes had the largest standardized partial regression coefficient. This means that net of family and educational background, age at first birth and opportunity variables, modern sex role attitudes remained the best predictor of school return after the first birth.

One of the ways in which sex role attitudes might be expected to influence educational status is through attitudes toward academic achievement. Stein and Bailey (1975) describe the sex-typed connotations of achievement orientation as "emotional independence, assertiveness, and competitiveness, all of which are traditionally unfeminine characteristics." (p. 350). Our findings are also consistent with the Davis and Bumpass (1976) analysis of determinants of continued education of women after marriage. They reported that modern sex role attitudes were positively correlated with educational attainment even after controlling for age and education at marriage, religion, marital status, race and occupation. Similarly, Scanzoni (1975) reported strong correlations between education and modern sex role orientation for four of the seven scales employed in a national probability sample of men and women.

Profile of School-Returners and Non-Returners

A summary of the results of our data analysis yields a clear profile of both school returners and non-returners. A young U.S.- born woman who is still in school when she gets pregnant, and who is sufficiently motivated to remain in school for several months of her pregnancy is very likely to continue after delivery. Her decision to return to school seems to be a result of high educational aspirations and modern sex role

attitudes. She believes that women are not bound to traditional roles, and aspires to further her own education in order to secure a good job. The fact that she is likely to be living with her mother, rather than a husband or boyfriend, enables her to translate these aspirations into actual school return, perhaps because of the financial support and convenient childcare arrangements afforded by her living situation.

Conversely, the older foreign-born women who have been out of school for several years are unlikely to return to high school after childbirth. This may be due to the irrelevance of a high school diploma to their lives and their acceptance of more traditional female roles. Many of these women have received vocational training, and are currently employed. They are also more likely than the returners to be living with their male partners. High school is something in their pasts rather than their futures. Even if their educational aspirations and sex role attitudes were equivalent to those of the younger or U.S.-born women, they would find it difficult to return to school because of home obligations and the difficulty of making adequate childcare arrangements.

Sources of Unexplained Variance

No social science research study can adequately explain all of the variation in differential status attainment. Although our model appears to fit the data well, there are a number of variables which could not be measured which may account for much of the unexplained variance in school return.

From past research it is clear that mental ability is a powerful predictor of educational aspirations and attainment. This association has been confirmed with both measures of IQ (Duncan et al, 1972), and

variables which assess the translation of ability into academic performance, such as class rank and grade point averages (Sewell et al, 1969; Sewell and Hauser 1976). In the present study self-assessed academic performance did not discriminate well between returners and non-returners. Access to individual school records and intelligence test results might well have improved the prediction of school return in our sample.

The inclusion of additional psychological variables might also have increased the proportion of explained variance in our study. In particular, achievement motivation (Atkinson, 1974) and self esteem (Portes and Wilson,1976) have been shown to explain differences in educational attainment in previous research. Unfortunately, the need to keep the interview to a reasonable length precluded the addition of these scales.

Finally, there are likely to be a number of special contingencies which influence an individual's educational decisions, but are difficult to assess as group trends. These may include a combination of encouragement, perceived benefits,opportunities and personal motivations which result in specific decisions regarding school return.

Implications for Future Research

Although any interruption in schooling is likely to delay or reduce eventual educational attainment, one cannot assume that all pregnant students become permanent dropouts. Our research confirms earlier observations by Furstenberg (1976) and Presser (1976) in that substantial numbers of young women return to school within a few years of the birth of their first child. In the present study one-third of the sample resumed high school within four years.

The fact that the birth of a child does not pose an insurmountable obstacle to continuation of formal education has important implications for research on the educational consequences of early childbearing. In order to gauge the effects of fertility on education, women must be followed after pregnancy and delivery, and not assumed to have become permanent dropouts.

Secondly, the often reported positive relationship between age at first birth and educational attainment does not appear to apply to non-high school graduates. For women who began with homogeneous levels of low attainment, recency of school attendance is more significant than age in determining later return. We postulate that there is an age beyond which a high school diploma is no longer perceived as a useful credential. This may be compounded by feelings of embarrassment over return to formal education and lack of opportunity to do so.

Our finding that school pregnancy policies had little impact on subsequent return should not be interpreted to mean that schools have no potential for impact on school return. To the contrary, our research suggests several activities which would help keep pregnant students from becoming permanent dropouts. Since the majority of students left because of minor physical discomforts related to their pregnancies, the provision of simple medical consultations and prenatal counseling might have significantly decreased school-leaving.

There are several other ways in which the schools could encourage continued education. Given the importance of aspirations and sex role attitudes for later return, the schools might profitably encourage discussion of appropriate roles and opportunities for women and work in personal goal setting.

Encouragement of return among the older women who have been out of school for several years is more problematic. It may be that for these women, vocational training would have a higher pay-off than preparation for a high school diploma. However, several strategies could be attempted. Most important would be publicity regarding opportunities for home study for equivalency examinations in Spanish or English, and the provision of free English-language classes and childcare arrangements. Since many of these women are reluctant to return because of family opposition and traditional sex role attitudes, counseling programs should be established which include the womens' partners and parents as well.

Of course barriers to resumption of high school are only one part of the larger picture of consequences of childbearing. Graduation from high school might be a more significant measure of status. Since so many women were still in school two to four years after delivery, we have not analyzed the determinants of high school graduation after childbirth. Nevertheless, it could be argued that by being given the opportunity to return to school a women is afforded the potential to secure her diploma. Once policy efforts are directed toward keeping pregnant students in school, or helping them to return soon after delivery, programs to help them to stay in school and earn a diploma would be an important sequella.

Finally, our research suggests that separate models of female educational attainment must be developed. Although further testing and relication on large, more representative samples is necessary, it appears that the determinants of school return among women may be very different from those tested on samples of men. Our work confirms the need cited by several authors for models which apply to women and which include not

only marriage and fertility variables, but also consideration of their timing in relation to other events in the life cycle.

REFERENCE LIST

Alexander, C., & Campbell, E.Q. Peer influences on educational aspirations and attainments. American Sociological Review, 1964, 29, 568-575.

Alexander, K.L. & Eckland, B.K. Sex differences in the educational attainment process. American Sociological Review, 1974, 39, 668-682.

Anderson, U., Jenss, R., Mosher, W., & Richner, V. The medical, social, and educational implications of the increase in out-of-wedlock births. American Journal of Public Health, 1966, 56, 1866-1873.

Atkinson, J.W. Motivational determinantsof intellective performance and cumulative achievement. In J. Atkinson & J. Raynor (Eds.), Motivation and achievement. Washington, D.C.: V.H. Winston and Sons, 1974.

Atkinson, J.W. The mainsprings of achievement-oriented activity. In J. Atkinson & J. Raynor (Eds.), Motivation and achievement. Washington, D.C.: V.H. Winston & Sons, 1974.

Atkinson, J.W., Lens, W., & O'Malley, P.M. Motivation and ability: interactive psychological determinants of intellective performance, educational achievement, and each other. In W. Sewell, R. Hauser & D. Featherman (Eds.), Schooling and achievement in american society. New York: Academic Press, 1976.

Atkyns, K.C. Trends in the retention of married and pregnant students in american public schools. Sociology of Education, 1968, 41, 57-65.

Atkyns, K.C. School administrative policy related to motherhood, pregnancy and marriage. Family Coordinator, 1968, 17, 69-73.

Bacon, L.A. Early motherhood, accelerated role transition and social pathology. Social Forces, 1974, 52, 333-341.

Bahr, S.J., & Leigh, G.K. Family size, intelligence and expected education. Journal of Marriage and the Family, 1978, 331-335.

Baizerman, M., Sheehan, C., Ellison, D., & Schlesinger, E. Pregnant adolescents: a review of the literature with abstracts. Washington D.C.: ED 065 800, ERIC Document Reproduction Service, 1971.

Baldwin, W. Adolescent pregnancy and childbearing growing concerns for americans. Population Reference Bureau Population Bulletin, 1976, 31, 1-34.

Baldwin, W. Update 1975 - adolescent childbearing. The population reference bureau, Washington, D.C., [1977].

Bandura, A., & Walters, R.H. Social learning and personality development. New York: Holt, Rinehart, and Winston, 1963.

Bayer, A.E. Marriage plans and educational aspirations. American Journal of Sociology, 1969, 75, 239-244.

Bayh, B. Introduction of S16029 to the 97th congress. Congressional Record, 1975, 121, S16029-S16033.

Bem, S.L. The measurement of psychological androgyny. Journal of Clinical and Consulting Psychology, 1974, 42, 155-162.

Bem, S.L. Beyond androgyny: some presumptuous prescriptions for a liberated sexual identity, 1975. (typewritten)

Birnbaum, R. Factors associated with the accuracy of self-reported high school grades. Psychology in the Schools, 1972, 9, 364-370.

Blau, P., & Duncan, O.D. The american Occupational Structure. New York: Wiley, 1967.

Bowen, W., & Finegan, T.A. The economics of labor force participation. Princeton: Princeton University Press, 1969.

Bradley, R.W. Birth order and school related behavior: a heuristic review. Psychological Bulletin, 1968, 70, 45-51.

Braren, B. The school-age pregnant girl: the problem and an attempted solution. Clinical Child Psychology Newsletter, 1971, 10, 17-20.

Bumpass, L.L. U.S. women's sex role ideology, 1970. American Journal of Sociology, 1975, 80, 1212-1219.

Bumpass, L.L., & Sweet, J.A. Differentials in marital instability:1970. American Sociological Review, 1972, 37, 754-766.

Bumpass, L.L. Patterns of employment before and after childbirth. Center for Demography and Ecology Working Paper No. 77-20, [1977].

Burchinal, L.G. Adolescent role deprivation and high school age marriage. Marriage and Family Living, 1959, 21, 378-384.

Card, J., & Wise, L. Teenage mothers and teenage fathers: the impact of early childbearing on the parent's personal and professional lives. Family Planning Perspectives, 1978, 10, 199-205.

Carter, L.F. Inadvertant sociological theory. Social Forces, 1971, 50, 12-25.

Carter, D., Little, C., & Barabasz, A. Comparative study of negro and white attitudes associated with educational-occupational aspirations. Journal Negro Education, 1972, 41, 361-364.

Cattanach, T. Coping with intentinal pregnancies among unmarried teenagers. School Counselor, 1976, 23, 211-215.

Children's Defense Found. Children out of school in America. Cambridge: Children's Defense Found, 1974.

Childs, R.D. The pregnant public school student: legal implications for school administrators. 1972. (ERIC Document Reproduction Service No. 070 975)

Chillman, C. Some psychological aspects of fertility, family planning, and the population policy of the united states. In J. Fawcett (Ed.), Psychological perspectives on population. New York: Basic Boods, 1973.

Clausen, J. & Clausen, S. The effects of family size on parents and children. In J. Fawcett (Ed.), Psychological perspectives on population. New York: Basic Books, 1973.

Coleman, J.S., Campbell, E.Q., Hobson, C.J., McPartland, J., Mood, A.M., Weinfield, F.D., & York, R.L. Equality of educational opportunity, U.S. Department of Health, Education and Welfare. Washington, D.C.: U.S. Government Printing Office, 1966.

Cooley, W.W., & Lohnes, P.R. Multivariate data analysis. New York: John Wiley & Sons, 1971.

Coombs, J., & Cooley, W. Dropouts: in high school and after school. American Educational Research Journal, 1968, 5, 343-363.

Coombs, L., & Freedman, R. Pre-marital pregnancy, childspacing, and later economic achievement. Population Studies, 1970, 24, 389-412.

Crockett, H.J., Jr. The achievement motive and differential occupational mobility in the united states. American Sociological Review, 1962, 27, 191-204.

Darlington, R.B. Multiple regression in psychological research and practice. Psychological Bulletin, 1968, 69, 161-182.

Davids, A., & Holden, R. Consistency of maternal attitudes and personality from pregnancy to eight months following childbirth. Developmental Psychology, 1970, 2, 364-366.

Davis, K. The american family in relation to demographic change. In C. Westoff, & F. Parke (Eds.), Demographic and social aspects of population growth. The Commission on Population Growth and the American Future, Washington, D.C.: U.S. Government Printing Office, 1972.

Davis, N.J., & Bumpass, L.L. The continuation of education after marriage among women in the united states: 1970. Demography, 1976, 13, 161-174.

Dempsey, J.J. Recidivism and post delivery school withdrawal: implications of a follow-up study for planning preventive services. Journal of School Health, 1972, 42, 291-297.

Duncan, B. Family factors and school dropout: 1920-1960. Ann Arbor, Michigan, 1965. (ERIC Document Reproduction Service No. ED 003 344)

Duncan, O.D. Ability and achievement. Eugenics Quarterly, 1968, 15, 1-11.

Duncan, O.D., & Featherman, D.L. Psychological and cultural factors in the process of occupational achievement. Social Science Research, 1972, 1, 121-145.

Duncan, O.D., Featherman, D.L., & Duncan, B. Socioeconomic background and achievement. New York: Seminar Press, 1972.

Eckland, B.K. College dropouts who came back. Harvard Educational Review, 1964, 34, 402-420.

Educational Testing Service. Background factors relating to college plans and college enrollment among public high school students. Princeton: E.T.S., 1957.

Ewer, P.A., & Gibbs, J.O. School return among pregnant adolescents. Journal of Youth & Adolescence, 1976, 5, 221-229.

Fawcett, J.T. (Ed.), Psychological perspectives on population. New York: Basic Books, 1973.

Featherman, D.L. The socioeconomic achievement of white religio-ethnic subgroups: social and psychological explanations. American Sociological Review, 1971, 36, 207-22.

Featherman, D.L., & Carter, T.M. Discontinuities in schooling and the socioeconomic life cycle. In W. Sewell, R. Hauser, & D. Featherman (Eds.), Schooling and achievement in american society. New York: Academic Press, 1976.

Fins, A. Sex and the school prinicpal. N.A.S.S.P. Bulletin, September 1974, 54-62.

Foltz, A.M., Klerman, L., & Jekel, J. Pregnancy and special education: who stays in school? American Journal of Public Health, 1972, 62, 1612-1619.

Freedman, R., & Coombs, L. Childspacing and family economic position. American Sociological Review, 1966, 31, 631-648.

Freedman, R., Whelpton, P.K., & Campbell, A.A. Family planning, sterility and population growth. New York: McGraw-Hill Book Company, Inc., 1959.

French, E., & Lesser, G. Some characteristics of the achievement motive in women. Journal of Abnormal and Social Psychology, 1964, 68, 119-128.

Furstenberg, F. Premarital pregnancy among black teenagers. Transaction, 1970, 7, 52-55.

Furstenberg, F. The social consequences of teenage parenthood. Family Planning Perspectives, 1976, 8, 148-164.

Furstenberg, F. Unplanned parenthood: the social consequences of teenage childbearing. New York: The Free Press, 1976.

Furstenberg, F., & Crawford, A. Family support: helping teenage mothers to cope. Family Planning Perspectives, 1978, 10, 322-333.

Garber, L.O. Unwed mothers win right to attend public school. Nation's Schools, 1970, 85, 81-82.

Glass, D.C., Neulinger, J., & Brim, O. Birth order, verbal intelligence, and educational aspiration. Child Development, 1974, 45, 807-811.

Goldmeier, H. Schoolage parents and the public schools. Children Today, 1976, 5, 18-23.

Goldstein, H., & Wallace, H.M. Serivces for and needs of pregnant teenagers in large cities of the united states, 1976. Public Health Reports, 1978, 93, 46-54.

Greene, B.E. Continuing education and the highschool drop-out. Adult Education, 1962, XII, 76-83, 1962.

Haller, A.O., & Portes, A. Status attainment processes, Sociology of Education, 1973, 46, 51-91.

Hansen, H., Stroh, G., & Whitaker, K. School achievement: risk factors in teenage pregnanceis? American Journal of Public, 1978, 68, 753-759.

Hathaway, S., Reynolds, P., & Monachesi, E. Follow-up of 812 girls 10 years after highschool dropout. Journal of Consulting and Clinical Psychology, 1969, 33, 383-390.

Hauser, R.M., Sewell, W.h., & Alwin, D.F. Highschool effects on achieve-

ment. In W. Sewell, R. Hauser, & D. Featherman (Eds.), Schooling and achievement in american society, pp. 309-341. New York: Academic Press, 1976.

Heller, J., & Kiraly, J. An educational program for pregnant school girls. Clearinghouse, 1973, 47, 476-482.

Hendrixson, L.L. Pregnant children: a socio-educational challenge. Phi Delta Kappan, 1979, 60, 663-666.

Hill, C.R. Capacities, opportunities and educational investments: the case of the high school dropout. The Review of Economics and Statistics, 1979, 61, 9-20.

Hobart, C.W. The pregnant highschool girl: an analysis and a proposal. Personnel and Guidance Journal, 1962, 40, 786-790.

Hochschild, A.R. A review of sex role research. American Journal of Sociology, 1973, 78, 1011-1029.

Hoffman, L. Fear of success in males and females: 1965 and 1971. Journal of Consulting and Clinical Psychology, 1974, 4, 353-358.

Hoffman, L. The employment of women, education and fertility. Merrill-Palmer Quarterly, 1974, 20, 99-119.

Hoffman, L., & Hoffman, M. The value of children to parents. In J. Fawcett (Ed.), Psychological perspectives on population, pp. 19-76. New York: Basic Books, 1973.

Horner, M.S. The measurement and behavioral implications of fear of success in women. In J. Atkinson, J. Raynor, et al. (Eds.), Motivation and achievement, pp. 91-117. Washington, D.C.: V.H. Winston and Sons, 1974.

Horner, M.S. Toward and understanding of achievement related conflicts in women. Journal of Social Issues, 1972, 28, 157-176.

Hout, M., & Morgan, W.R. Race and sex variations in the causes of the expected attainments of high school seniors. American Journal of Sociology, 1975, 81, 364-394.

Howell, M., & Frese, W. Race, sex and aspirations: evidence for the race convergence hypothesis. Sociology of Education, 1979, 52, 34-46.

Hummel, T.J., & Sligo, J.R. Empirical comparison of univariate and multivariate analysis of variance procedures. Psychological Bulletin, 1971, 76, 49-57.

Iffert, R.E. Retention and withdrawal of college students. DHEW Bulletin No. 1. Washington, D.C.: U.S. Government Printing Office, 1958.

Institute for Social Research. From adolescence to adulthood. I.S.R.

Newsletter. The University of Michigan, Spring, 1978.

Jaccard, J.J., & Davidson, A.R. The relation of psychological, social and economic variables to fertility-related dicisions. Demography, 1976, 13, 329-338.

Jekel, J.F., Klerman, L.V., & Bancroft, D. Factors associated with rapid subsequent pregnancies among school-age mothers. American Journal of Public Health, 1973, 63, 769-773.

Jencks, C. et al. Inequality. New York: Basic Books, 1972.

Jung, S.M., & Moore, J.C. The accuracy of self-reported highschool grades. College and University, 1970, 45, 225-229.

Kahl, J.A. Educational and occupational aspirations of 'common-man' boys. Harvard Educational Review, 1953, 23, 186-203.

Kandel, D.B., & Lesser, G.S. Parental and peer influences on educational plans of adolescents. American Sociological Review, 1969, 34, 213-223.

Kerckhoff, A.C., & Campbell, R.T. Black-white differences in the educational attainments process. Sociology of Education, 1977, 50, 15-27.

Kerlinger, F.N. Foundations of behavioral research. New York: Holt, Rinehart and Winston, Inc., 1973.

Kerlinger, F.N., & Pedhazur, E. Multiple regression in behavioral research. New York: Holt, Rinehart and Winston, Inc., 1973.

Kipp, M., & Griggs, S. Special educational centers for unwed pregnant girls. School Counselors, 1975, 22, 342-346.

Klein, L. Models of comprehensive service: regular school based. Journal of School Health, 1975, 45, 271-273.

Klerman, L.V., & Jekel, J.F. School-age mothers: problems, programs and policy. Connecticut: Linnet, Hamden, 1973.

Kruger, W.S. Education for parenthood and the schools. Children Today, 1973, 4-7.

Lefcourt, H.M. Internal versus external control of reinforcement: a review. Psychological Bulletin, 1966, 65, 206-220.

Lipman-Blumen, J. How ideology shapes women's lives. Scientific American, 1972, 226, 34-42.

Lueptow, L. Parental status and influence and the achievement orientations of highschool seniors. Sociology of Education, 1975, 48, 91-110.

McClendon, M.J. The occupational status attainment processes of males and females. American Sociological Review, 1976, 41, 52-64.

McDonald, A.L., Simpson, P.M., & Whitfield, A.M. An assessment of the reliability of the indonesia fertility sorvey data. Scientific Report, 1978, 3, 7-68.

McDonald, T.F. Teenage pregnancy. Journal of the American Medical Association, 1976, 236, 598-599.

McGrath, P. The unfinished assignment: equal education for women. Worldwatch Paper, 1976, 7.

Mason, W., Hauser, R., Kerckoff, A., Sandomirskyposs, S., & Manton, K. Models of response effor in student reports of parental socioeconomic characteristics. In W. Sewell, R. Hauser, & D. Featherman (Eds.), Schooling and achievement in american society, pp. 443-494. New York: Academic Press, 1976.

Menken, J. Teenage childbearing: its medical aspects and implications for the united states population. In C.F. Westoff & R. Parke (Eds.), Demographic and social aspects of population growth, pp. 335-353. Washington, D.C.: U.S. Governemtn Printing Office, The Commission on Population Growth and the American Future, 1972.

Menken, J. The health and social consequences of teenage childbearing. Family Planning Perspectives, 1972, 4, 45-53.

Moore, K., & Waite, L. Early childbearing and educational attainment. Family Planning Perspectives, 1977, 9, 220-225.

Moulton, R.W. Motivational implications of individual differences in competence. In J. Atkinson, J. Raynor, et al. (Eds.), Motivation and achievement, pp. 77-82. Washington, D.C.: V.H. Winston and Sons, 1974.

Nation's Schools. School policies waiver on teen-age pregnancies. 1969, 83, 99.

Nie, N.H. et al. Statistical package for the social sciences. New York: McGraw-Hill Book Company, Second Edition, 1975.

Noland, R., & Sherry, C. Education attitudes and practices regarding the pregnant highschool girl. Mental Hygiene, 1967, 51, 49-54.

Nye, R.E. Schoolage parenthood: consequences for babies, mothers, fathers, grandparents and others. Washington State University: Extension Bulletin 667, Cooperative Extension Service, Pullman, 1977.

Nye, R.I., & Hoffman, L.W. The employed mother in america. Chicago: Rand McNally and Company, 1963.

Osofsky, H. The pregnant teenager: a medical educational and social analysis. Illinois: Charles C. Thomas, 1968.

Pohlman, E., & Pohlman, J.M. The psychology of birth planning. Cambridge: Schenkman Publishing Company, 1969.

Portes, A., & Wilson, K.L. Black-white differences in educational attainment. American Sociological Review, 1976, 41, 414-431.

Raynor, J. Future orientation in the study of achievement motivation. In J. Atkinson, J. Raynor, et al. (Eds.), Motivation and achievement, pp. 121-154. Washington, D.C.: V.H. Winston and Sons, 1974.

Raynor, J. Motivation and career striving. In J. Atkinson, J. Raynor, et al. (Eds.), Motivation and achievement, pp. 369-387. Washington D.C.: V.H. Winston and Sons, 1974.

Robinson, J.P., & Shaver, P.R. Measures of social psychological attitudes. Institute for Social Research. Michigan: University of Michigan, 1976.

Rosen, B.C. Race, ethnicity and the achievement syndrome. American Sociological Review, 1959, 24, 47-60.

Rosen, B.C., & Aneshensel, C.S. Sex differences in the educational-occupational expectation process. Social Forces, 1978, 57, 164-186.

Rosenberg, M. Society and the adolescent self-image. Princeton: Princeton University Press, 1975.

Rosenfeld, R.A., & Sørensen, A.B. Sex differences in patterns of career mobility. Demography, 1979, 16, 89-101.

Rossi, A. Transition to parenthood. Journal of Marriage and the Family, 1968, 30, 26-39.

Rotter, J.B. Generalized expectancies for the internal versus external control of reinforcement. Psychological Monographs, 1966, 80, 1-28.

Rotter, J.B. Some problems and misconceptions related to the construct of internal versus external control of reinforcement. Journal of Consulting and Clinical Psychology, 1975, 43, 56-67.

Roy, P. Adolescent roles: rural-urban differentials. In F. Nye, & L. Hoffman (Eds.), The employed mother in america, pp. 165-190. Chicago: Rand McNally, 1963.

Saleem, B., & Miller, S.M. The neglected dropout: the returnee. Syracuse, N.Y., 1963. (ERIC Document Reproduction Sercice No. 001 679)

Scanzoni, J.H. Sex roles, life styles and childbearing: changing patterns in marriage and the family. New York: Free Press, 1975.

Schacter, S. Birth order, eminence and higher education. American Sociological Review, 1963, 28, 755-768.

Sewell, W.H., Haller, A.O., & Ohlendorf, G.W. The educational and early occupational status attainment process: replication and revision. American Sociological Review, 1970, 35, 1014-1027.

Sewell, W.H., Haller, A., & Portes, A. The educational and early occupational attainment process. American Sociological Review, 1969, 34, 82-92.

Sewell, W.H., & Hauser, R.M. Causes and consequences of higher education: models of the status attainment process. In W. Sewell, R. Hauser, & D. Featherman (Eds.), Schooling and achievement in american society, pp. 9-27. New York: Academic Press, 1976.

Sewell, W.H., Hauser, R.M., & Featherman, D.L. (Eds.). Schooling and achievement in american society. New York: Academic Press, 1976.

Sewell, W.H., & Shah, V.P. Social class, parental encouragement and educational aspirations. American Journal of Sociology, 1968, 73, 559-572.

Shapiro, L. Did fear of success fail? New York Times Magazine, July 1977, 19.

Sherman, J. On the psychology of women: a survey of empirical studies. Springfield: Charles C. Thomas, 1971.

Shively, E.M. She bringeth her food from afar: some questions posed for theory and research by married american women's work roles. Unpublished doctoral dissertation, Teachers College, Columbia University, 1961.

Simpson, R.L. Parental influence, anticipatory socialization and social mobility. American Sociological Review, 1962, 27, 517-522.

Spady, W.G. The impact of school resources on students. In E. Sewell, R. Hauser, & D. Featherman (Eds.), Schooling and achievement in american society, pp. 185-223. New York: Academic Press, 1976.

Spaeth, J.L. Cognitive complexity: a dimension underlying the socioeconomic achievement process. In W. Sewell, R. Hauser, & D. Featherman (Eds.), Schooling and achievement in american society, pp. 103-131. New York: Academic Press, 1976.

Stein, A.H., & Bailey, M.M. The socialization of achievement orientation in females. Psychological Bulletin, 1975, 80, 345-366.

Stine, O.C., Rider, R.V., & Sweeney, E. School leaving due to pregnancy in urban adolescent population. American Journal of Public Health, 1964, 54, 1-6.

Tatsuoka, M. Validation studies: the use of multiple regression equations. Selected Topics in Advanced Statistics: An Elementary Approach, Number 5. Illinois: Institute for Personality and Ability Testing, 1976.

Terhune, K. & Pilie, R. A review of the actual and expected consequences of family size. DHEW Publication #(NIH) 75-779. Report prepared for the Center for Population Research NICHD, DHEW, 1974.

Tickamyer, A.R. Nonrecursive models of labor force participation, fertility behavior and sex role attitudes. Paper Presented at the Population Association of America Annual Meetings, St. Louis, Missouri, 21-23 April 1977.

Tinto, V. Dropout for higher education: a theoretical synthesis of recent research. Review of Educational Research, 1975, 45, 89-125.

Treiman, D.J., & Terrell, K. Sex and the process of status attainment: a comparison of working women and men. American Sociological Review, 1975, 40, 174-200.

Trussell, J.T. Economic consequences of teenage childbearing. Family Planning Perspectives, 1976, 8, 184-190.

Tyree, A., & Treas, J. The occupational and marital mobility of women. American Sociological Review, 1974, 39, 293-302.

U.S. Department of Labor. Going back to school at 35. (Special Labor Force Report 159),U.S. Dept. of Labor: Bureau of Labor Statistics, 1973.

U.S. Department of Labor. Employment of highschool graduates and dropouts, October, 1973. (Special Labor Force Report 168),U.S. Dept. of Labor: Bureau of Labor Statistics, 1974.

U.S. Department of Labor. Going back to school at 35 and over. (Special Labor Force Report 184), U.S. Dept. of Labor: Bureau of Labor Statistics, 1975.

U.S. Department of Labor. Students, graduates and dropouts in the labor market, October, 1975. (Special Labor Force Report 191), U.S. Dept. of Labor: Bureau of Labor Statistics, 1976.

Veroff, J., Wilcox, S, & Atkinson, J. The achievement motive in highschool and college age women. Journal of Abnormal and Social Psychology, 1953, 48, 108-119.

Waite, L., & Moore, K. The impact of an early first birth on young women's educational attainment. Social Forces, 1978, 56, 844-865.

Wallace, H.M., Gold, E.M., Goldstein, H, & Ogelsby, A. A study of services and needs of teenage pregnant girls in the large cities of the united states. American Journal of Public Health, 1973, 63, 5-16.

Warren, D.R. Pregnant student public schools. Phi Delta Kappan, 1973.

Washington, V.E. Models of comprehensive service: special school-based Journal of school health, 1975, 45, 274-277.

Weiner, B. The effects of unsatisfied achievement motivation on persistence and subsequent performance. In J. Atkinson, J. Raynor, et al. (Eds.), Motivation and achievement, pp. 347-357. Washington, D.C.: V.H. Winston and Sons, 1974.

Westoff, C.F., & Parke, R. (Eds.). Demographic and social aspects of population growth, (Vol. 1). The Commission on Population Growth and the Future Research Reports. Washington, D.C.: U.S. Government Printing Office, 1972.

Williams, Trevor. Abilities and environment. In W. Sewell, R. Hauser, & D. Featherman (Eds.), Schooling and achievement in american society, pp. 61-101. New York: Academic Press, 1976.

Wilson, K.L., & Portes, A. The educational attainment process: results from a national sample. American Journal of Sociology, 1974, 81, 343-363.

Wurtz, F., & Fergen, G. Boards still duck the problem of pregnant school girls. American School Board Journal, 1970, 157, 22-24.

Zajonc, R.B. Family configuration and intelligence. Science, 1976, 192, 227-236.

REFERENCE NOTES

Bennett, V.C. & Bardon, J.I. Evaluation of the effects of a program offering educational services for schoolage parents on participants and their children. Technical Report presented to the Office of Program Development, Division of Research, Planning and Evaluation, New Jersey State Department of Education.

Card, J.J. Consequences of adolescent childbearing for the young parent's future personal and professional life (an analysis of project TALENT data). Palo Alto, California: American Institutes for Research, 1977.

Carlson, E. Family background, school and early marriage. Paper presented at the 1978 Meetings of the Population Association of America, Atlanta, April, 1978.

Hauser, R.M., & Daymont, T.N. Schooling, ability and earnings: cross-sectional findings 8 to 14 years after highschool graduation. Madison, Wisconsin: Center for Demography and Ecology Working Paper 76-19 (Revised). Center for Demography and Ecology, University of Wisconsin, 1976.

Koontz, E.D. Plans for widening women's educational opportunities. Paper presented at the Wingspread Conference on Women's Higher Education, Racine, Wisconsin, 13 March 1972..

McCarthy, J., & Syropoulos, M. Evaluation of the program to continue the education of girls who must leave school because of pregnancy 1969-1970. Detroit Public Schools: Research and Development Department Program Evaluation Section, 1971.

Mare, R.D. Social background and school continuation decisions, part I. Paper presented at the Annual Meeting of the Population Association of America, St. Louis, Missouri, 21-23 April 1977.

Pakter, J., O'Hare, D., & Nelson, F. Teenage pregnancies in new york city: impact of legalized abortions. Paper presented at the 102nd APHA Annual Meeting, New Orleans, La., 23 October 1974.

Pozsony, J. A longitudinal study of unmarried mothers who kept their first-born children. The Family and Children's Services of the City of London and County of Middlesex, Toronto, 1973. (Mimeographed.)

Presser, H.B. Female employment and fertility soon after the first birth. Paper presented at the Annual Meeting of the American Sociological Association, San Francisco, August, 1975.

Presser, H.B. Role and fertility patterns of urban mothers. Unpublished Report for the NICHD, 1976.

Stewart, R., & Johnson, T. Adolescent sexuality and teenage pregnancy: a selected, annotated bibliography with summary forewards. Unpub-

lished bibliography, State Services Office, Carolina Population Center, University of North Carolina, Chapel Hill. June, 1976.

Survey Research Center, Institute for Social Research. Interviewer's manual: revised edition. Unpublished manual, The University of Michigan, 1976.

Sweet, J.A. Returning to work after childbirth: national natality survey, 1967-69. (Working Paper 74-31). Unpublished manuscript, Center for Demography and Ecology, University of Wisconsin, 1974.

Sweet, J.A. Emplyment during pregnancy. (Working Paper 74-16). Unpublished manuscript, Center for Demography and Ecology, University of Wisconsin, 1974.

Tickamyer, A.R., & Smith-Lovin, L. A nonrecursive model of sex role attitudes, labor force participation and fertility behavior. Paper presented at the Population Association Meeting, St. Louis, 21 April, 1977.

Voss, P.R. Social determinants of age at first marriage in the united states. Paper presented at the Annual Meetings of the Population Association of America, St. Louis, Missouri, 21-23 April, 1977.

Wolf, W.C. Occupational attainments of married women: do career contingencies matter? (CDE Working Paper 76-3). Unpublished manuscript, Center for Demography and Ecology, University of Wisconsin, 1976.

Wright, A. The effects of sibships size and birth order on education, occupation and earnings. (CDE Working Paper 77-8). Unpublished manuscript, Center for Demography and Ecology, University of Wisconsin, 1977.

Appendix A

MAIL SURVEY EVALUATION OF THE INTERVIEW EXPERIENCE

1. How interesting was the interview?	No.	(%)
Very interesting	35	(62.5)
Fairly interesting	20	(35.7)
Not very interesting	0	(0.0)
Not at all interesting	1	(1.8)
Total	56	(100.0)

2. How did you feel about the length of the interview?		
Much too short	0	(0.0)
Too short	2	(3.6)
About right	44	(78.5)
Too long	7	(12.5)
Much too long	2	(3.6)
No response	1	(1.8)
Total	56	(100.0)

3. How well did the interviewer conduct the interview?		
Very well	40	(71.4)
Fairly well	16	(28.6)
Not very well	0	(0.0)
Not at all well	0	(0.0)
Total	56	(100.0)

4. How well did the interviewer explain the purpose of the study?		
Very well	43	(76.8)
Fairly well	12	(21.4)
Not very well	1	(1.8)
Not at all well	0	(0.0)
Total	56	(100.0)

APPENDIX B

INDEPENDENT VARIABLES WITH OPERATIONAL DEFINITIONS AND HYPOTHESIZED ASSOCIATION WITH RETURN TO SCHOOL

Variable	Operational Definition	Reference	Hypothesized Direction	Reference
Socio-economic Status	Parents' Occupational Prestige Levels and Years of Education	Sewell & Hauser (1976)	Positive	Duncan et al. (1972)
Ethnicity	Hospital Chart Designation of Respondent	Standard	Unknown for Hispanics	
Region	Childhood Region of Residence	Jencks et al. (1972)	Slight negative association with Southern U.S.	Spady (1976) Jencks et al. (1972)
Family Size	Number of Siblings	Standard	Negative	Duncan et al. (1972) Mare (1977)
Birth Order	Same	Standard	Negative	Bradley (1968) Glass et al. (1974)
Religion	Self-designated	Standard	None after SES Controls	Duncan (1972)
Ed Attainment Prior to Pregnancy	Highest Grade Completed	Standard	Positive	Saleem & Miller (1963) Davis & Bumpass (1976)
Ed Aspirations	Level of Schooling Desired	Standard	Positive	Wilson & Portes (1974) Hauser et al. (1976)

APPENDIX B (continued)

INDEPENDENT VARIABLES WITH OPERATIONAL DEFINITIONS AND HYPOTHESIZED ASSOCIATION WITH RETURN TO SCHOOL

Variable	Operational Definition	Reference	Hypothesized Direction	Reference
Career Aspirations	Home or Work Role Aspirations	Presser (1976)	Positive with High Status Career Aspirations	Haller & Portes (1973)
Academic Performance	Self-reported Performance	Birnbaum (1972) Portes & Wilson (1976)	Positive	Alexander & Eckland (1974)
Attitude Toward School	Reported Liking of School	Presser (1976) Furstenberg (1976)	Positive	Furstenberg (1976)
Significant Other Influence	Attitudes of Parents and Partners Toward School Return	Sewell et al. (1969)	Positive with Encouragement	Sewell et al. (1969) Haller & Portes (1973)
Age at First Birth	Dates of Birth and Delivery	Standard	Curvilinear: Negative for both extremes	Presser (1976) Davis and Bumpass (1976)
Union Status	Marital Status/Living Wtth Partner	Standard	Negative for Married Women	Furstenberg (1976) Davis & Bumpass (1976)
Subsequent Pregnancies	Pregnancy History	Westoff (1972)	Negative	Tickamyer & Smith-Lovin (1977) Furstenberg (1976)

APPENDIX B (continued)

INDEPENDENT VARIABLES WITH OPERATIONAL DEFINITIONS AND HYPOTHESIZED ASSOCIATION WITH RETURN TO SCHOOL

Variable	Operational Definition	Reference	Hypothesized Direction	Reference
Desire for children	Planning status of pregnancies	Westoff (1972)	Negative	Inferred from sex role attitude and fertility relationships with attainment
Income-related variables	Work history and salaries "Need" to work Potential support if unemployed Perceived cost of schooling Perceived loss unemployment or AFDC benefits	No precedent	Positive with high status jobs; Negative with need to work.	Inferred from SES literature
Child-care availability	Institutional or familial arrangements Behavior if child-care were available Household composition	Floge (1976)	Positive with increased availability	Anderson et al. (1966)
Knowledge of opportunities to return	Open-ended knowledge of opportunities Peers who have returned or plan to	No precedent	Positive	No precedent
Reasons for non-return or return	Open-ended Perceived (actual) problems in returning	No precedent	-	-

APPENDIX β (continued)

INDEPENDENT VARIABLES WITH OPERATIONAL DEFINITIONS AND HYPOTHESIZED ASSOCIATION WITH RETURN TO SCHOOL

Variable	Operational Definition	Reference	Hypothesized Direction	Reference
School effects	School policy regarding pregnant students	Wallace et al (1973) Nation's Schools (1969)	Negative with restrictive policies	Baldwin (1976) Goldmeier (1978)
Locus of Control	Rotter scale items with highest biserial correlations for women	Rotter (1966)	Positive with internal control	Rotter (1966)
Sex role attitudes	National Fertility Survey scale	Bumpass (1975)	Positive with modern attitudes	Davis & Bumpass (1976)

APPENDIX C: PEARSON CORRELATION MATRIX

Variable Name Key

Key	Variable
P62	School return
A7577	Father's occupational prestige score
B2224	Mother's occupational prestige score
B0708	Father's years of education
B1011	Mother's years of education
B18	Mother worked during respondent's childhood
B3132	Number of siblings
B3334	Respondent's birth order
B39	Receipt of welfare during childhood
B40	Time on welfare during childhood
A22	Ethnicity (Black)
A53	Language preference (English)
A55	U.S. Born
A5657	Years in U.S. if born elsewhere
P6566	Significant Other Influence Score (High to Low)
Q10	Internal/External Locus of Control (High = external)
Q1112	Sex Role Attitudes (High = traditional)
C3031	Years of education prior to pregnancy
C32	Had any vocational education
P7879	Prestige score for age 13 occupational aspiration
C44	Educational aspirations
C35	Dropped out of school prior to pregnancy
C38	Liked school

APPENDIX C: PEARSON CORRELATION MATRIX

Variable Name Key (cont.)

Key	Variable
C40	School marks (High = excellent)
C41	Ever failed a course
A6263	Year of birth
P68	Live births since sample child
E69	Has heard of GED
F6	Respondent has worked since first birth
P58	Husband or boyfriend in household at pregnancy
P5657	Months of pregnancy spent in school
J10	Mother in household now
P75	Husband or boyfriend in household now
J53	Receipt of welfare since first birth
F64	Pregnancies since first birth
Q0609	Approximate 1977 per capita income